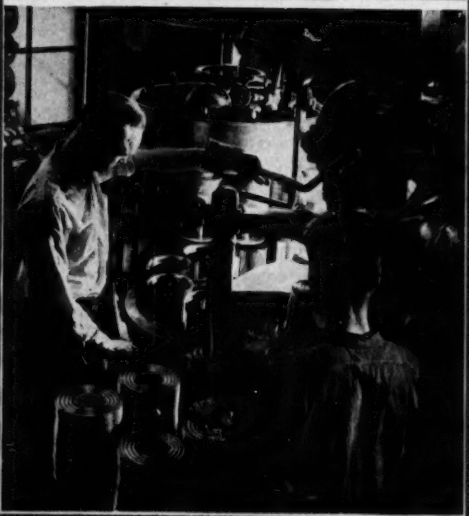


Chemical Week—

September 12, 1953

Price 50 cents



▶ Welcoming the family at the plant underpins this successful community relations plan . . . p. 27

▶ Acid solution microbes gobble up industrial wastes—from petroleum to lemon pulp . . . p. 40

▶ Soda ash from Wyoming's wilds here is the how of Westvaco's deep-sea project . . . p. 50

▶ Glycol makers reconsider, recast distribution plans as competition keens . . . p. 56

▶ Orien solvent DMF plummets in price, pushes for wider, diversified markets . . . p. 71



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YOUR ALKALIES, JIM?"

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Chemical Week

Volume 73 • September 12, 1953 • Number 11

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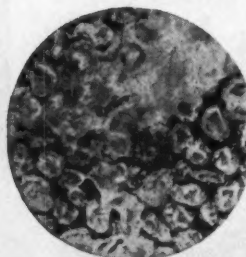
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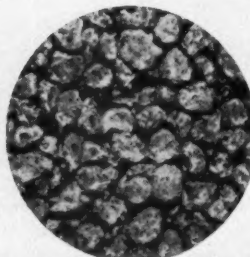
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(LEFT) Conventionally mixed material showing typical smears of unmixed materials. (RIGHT) Simpson mixed material showing complete uniformity of mix — which will remain in that form even in transit, or after long storage periods.



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OPINION...

To Ameliorate Problems

TO THE EDITOR: As a subscriber to CW I have had the urge several times to write you about several worthy features . . . The urge has finally developed into action.

. . . Your coverage of our A. I. C. meeting on Restrictive Employment Contracts was excellent. There was no "soft-pedaling" of the facts and opinions presented. . . . Frank discussions and frank reporting will do much to stimulate both employee and employer to understand their differences and to work at ameliorating the difficulties and problems troubling one or both sides.

. . . A bouquet also for the way you include names, sketches and photographs of the bench workers, supervisors, etc., as well as of the management officials who contribute to significant developments you report . . .

B. S. FRIEDMAN

Past President

Chicago Technical Council

Chicago, Ill.

Scholarship Funds

TO THE EDITOR: I was happy to see your thoughtful analysis of the trend in chemical industry support of higher education (Aug. 22). The data you presented are impressive.

The emphasis of your news article was on direct financial aid to university students, and the careful reader will understand this. However, the table heading at the beginning of the article could mislead the casual reader into thinking that the amounts shown are total expenditures.

On the contrary, as you point out later in the article, many of these programs embrace important types of financial aid, in addition to the scholarship and fellowship funds tabulated.

These other awards are equally important and in some cases are preferred by the universities. Whether this money is for the support of fundamental university research or for professorships . . . they all have the same general objective, and I think you are mistaken to call them "non-

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.



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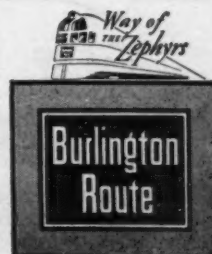
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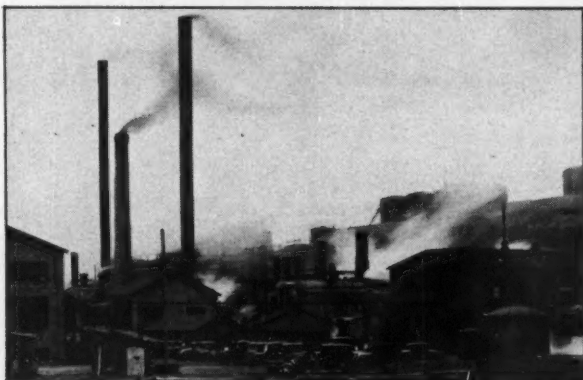
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OPINION

educational funds." Such funds . . . support graduate research, an integral part of graduate education.

I was perplexed that you did not emphasize more the magnitude of total support, since the article states that the academic aid totals are considerably larger than the particular segment shown.

This story deserves the attention of your readers, but I suggest that the full picture would be equally interesting.

D. S. WEDDELL
Chairman, Fellowship and
Scholarship Committee
Monsanto Chemical Co.
St. Louis, Mo.

Right enough, Reader Weddell. This roundup was confined to fellowships and scholarships; several other analyses now being made will cover other aspects of corporate giving.—Ed.

Top Talent Dearth

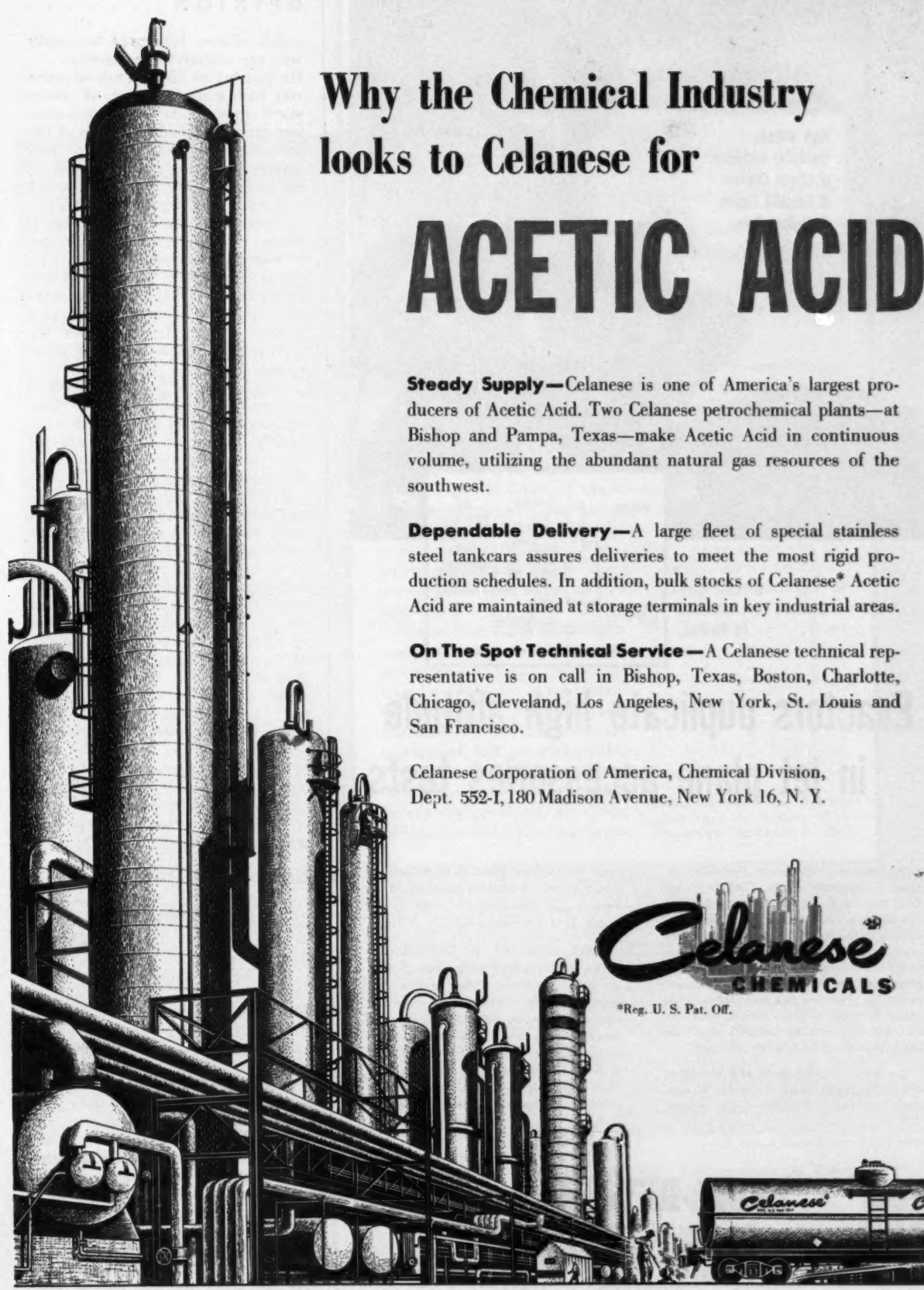
TO THE EDITOR: This letter is prompted by the news article entitled "Wanted at Once: Top Talent" (Aug. 8). . . .

It is very annoying to read repeatedly of the shortage of top-notch executive personnel when so frequently most able men find it extremely difficult to sell their services. (This does not apply to me as I am not in the position of seeking a job.) . . . But, I do know the details of some men's attempts to find executive positions anywhere near suitable to their past work and abilities.

Your report mentions one difficulty—the extremely tight specifications drawn for some of the top jobs—specifications that are practically impossible to fill. . . . I sometimes suspect that these tight specifications are deliberately drawn in order to cover up the real situation. Where a company has a system of promotion from within, it is very distasteful to personnel to have a man brought in from outside. Each top executive begins to wonder if a newcomer will take his job or make his job less attractive. Often the applicant is forced to be interviewed by a man who might think his job is in danger.

Another difficulty is that companies having pension plans hesitate to employ a man over 40 years old . . . unless that man is willing to forego pension benefits. Yet the qualities of rounded experience and leadership that are needed cannot usually be found in men in the lower age groups.

I chanced to talk with the head of an employment service in New York last week while I was looking for a



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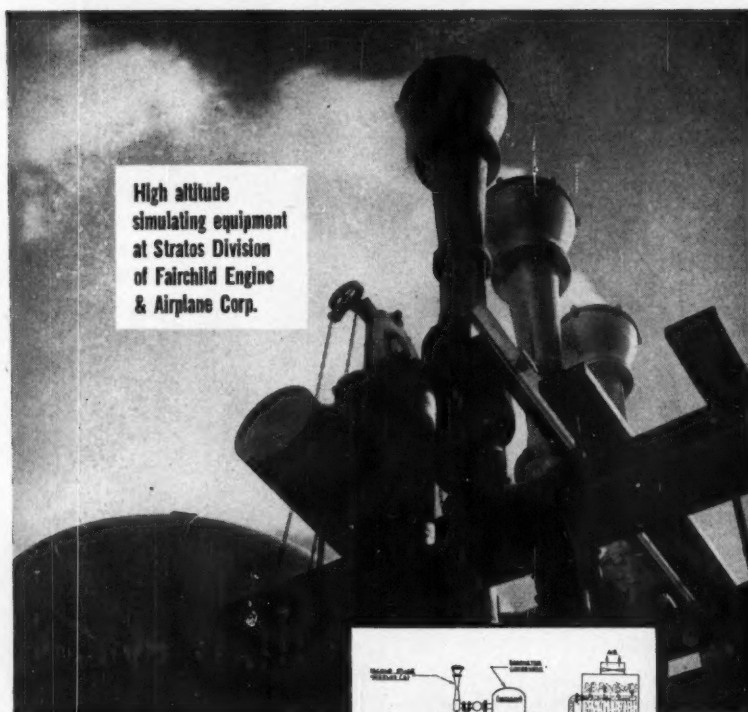
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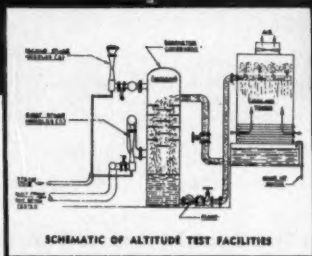
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OPINION

couple of men. He agreed thoroughly with my analysis of the problem . . . He had before him records of many very high grade executives of proven worth—men who have been managers, vice-presidents, and presidents of important companies—who are now looking for connections because of consolidations or other reasons not connected with their own abilities.

I personally know of one man to whom I would entrust the fortunes of important companies in the . . . chemical field, but who has, so far, been unable to find a suitable position. He has a fine personality and a brilliant record. He is probably too good for the people who have interviewed him.

As I have said, I have no personal interest in this problem, but I think it's about time that someone takes the trouble to refute realistically some of these smug statements that industry is looking for top talent.

I agree that industry badly needs top talent, but if they want to get good men, they should overhaul their methods of selection. . . .

NAME WITHHELD

Industry is short of top talent—that is established and on that we agree; we are also sure that there is a good deal of top talent that could be put to use. Moreover, we agree with the writer that industry has not always gone about finding (or developing) men in the most efficient manner.

Nevertheless, management consultants agree that executives—who may be expert at marketing goods—are often woefully inept in selling their abilities. Clearly, both buyer and seller could ameliorate their problems by a more thoughtful approach.—Ed.

Name Your First

TO THE EDITOR: . . . In a letter to you (Aug. 22) J. M. Huber Corp. wants to take credit for pioneering unitized shipments of clays.

. . . The first commercial announcement was ours . . . in an advertisement in *Rubber Age* in July '50. We also credit the New Jersey Zinc Co., which was shipping zinc oxide in this manner even earlier . . . thus proving it feasible for clay.

Let us also give credit to the many open-minded and progressive materials handling men who receive these shipments . . . without whose help and suggestions these developments would not be possible. . . .

M. E. DAVIS
General Manager
National Kaolin Products Co.
Aiken, N.C.

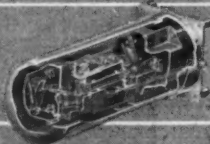
CW has never said that anyone was

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OPINION

either (1) first to make such a shipment, or (2) first to announce it. The battle lines are drawn, therefore, between National, Huber and any and all other pioneers.—Ed.

Fenders, Too

TO THE EDITOR: We have read with interest your news article "Plastic Tanks Grow Up" (Aug. 29).

We believe credit for development should go to the engineers who designed the innovation. In the last paragraph the Fruehauf Trailer Co. is given credit for plastic glass accessories. . . . Fruehauf did supply the trailer but the pump-box, hose containers and fenders were our own design. . . .

T. B. ALMY
Vice-president
Carl N. Beetle Plastics Corp,
Fall River, Mass.

CW did indeed credit Beetle with molding the tank, herewith transfers credit for fenders, etc., also to Beetle.
—Ed.

DATES AHEAD

American Institute of Chemical Engrs., Fairmont and Mark Hopkins hotels, San Francisco, Calif., Sept. 13-16.

The Electrochemical Society, Ocean Terrace hotel, Wrightsville Beach, N.C., Sept. 13-16.

American Assn. of Textile Chemists and Colorists, annual meeting, Conrad Hilton hotel, Chicago, Ill., Sept. 17-19.

Chemical Market Research Assn., fall resort meeting, Pocono Manor Inn, Pocono Manor, Pa., Sept. 17-18.

Drug, Chemical and Allied Trades section, New York Board of Trade, annual meeting, Pocono Manor Inn, Pocono Manor, Pa., Sept. 24-27.

Textile Chemical Manufacturers Assn., annual meeting, Claridge hotel, Atlantic City, N.J., Oct. 1-2.

American Coke and Coal Chemicals Inst., annual meeting, Greenbrier hotel, White Sulphur Springs, W.Va., Oct. 12-13.

Assn. of Official Agricultural Chemists, annual meeting, Shoreham hotel, Washington, D.C., Oct. 12-14.

American Inst. of Chemical Engineers, South Texas Section, annual technical session, Galvez hotel, Galveston, Tex., Oct. 16.

Salesmen's Assn. of American Chemical Industry, chemical sales clinic, Commodore hotel, New York, N.Y., Oct. 19-20.

Natl. Paint, Varnish and Lacquer Assn., annual meeting, Chalfonte-Haddon Hall, Atlantic City, N.J., Oct. 26-28.



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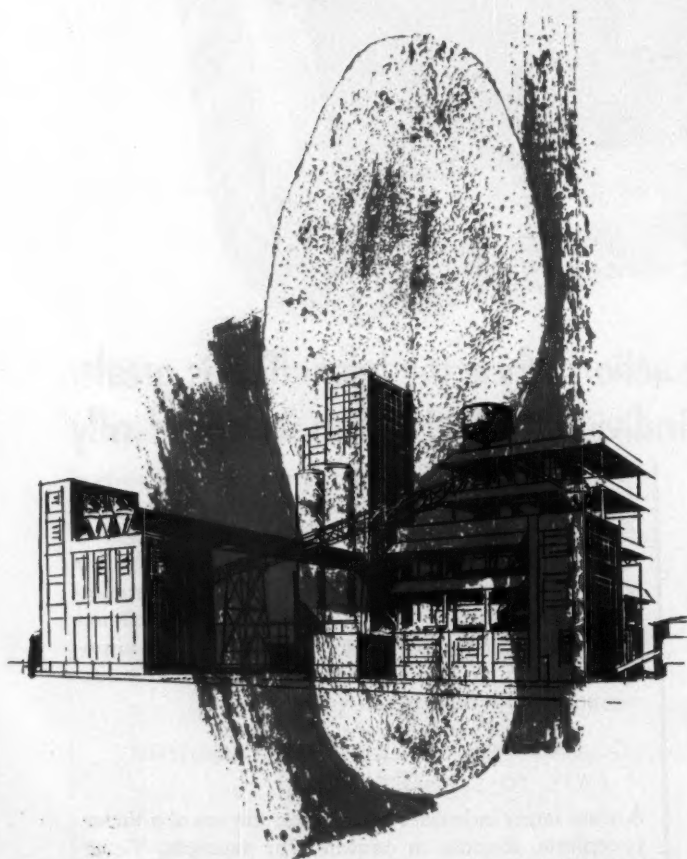
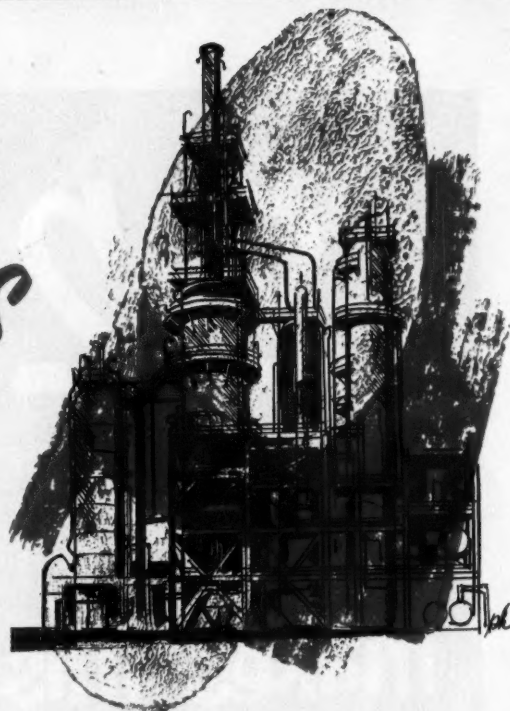
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NEWSLETTER

Labor Day is past. Lazy vacation days have come and gone, and the chemical industry is back at the desk, or out in the plant. The fourth quarter is only a couple of weeks off, and already the portents point to a good time for practically everybody.

The big problem in the fourth quarter—and well into the future—won't be inadequate production, nor will it be insufficient consumption. Rather, it will be competitive selling in a mushroomed industry where many a company, in an effort to hedge its position by diversifying, has horned in on someone else's act. Look at agricultural chemicals if you have to be convinced.

This squarely puts the emphasis on sell, sell, sell. It's time to look critically and constructively at your sales staff, shore it up if needs be, and get it in trim for the competitive tussle ahead.

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Optimism has nudged pessimism from the driver's seat—at least for the short haul. Only a few months ago industry men were bracing for a fourth-quarter bump, a '54 fall. Now most of them expect this year to be as good as last. And next year's corporate tax slash will prop profits, the individual tax cut will underpin purchasing power.

Nonetheless, business planners are keeping close tabs on specific precarious areas:

- Agriculture. Farmers' lower cash income may well crimp agricultural chemical sales. Case in point: Many beefmen are bankrupt, are letting their mesquite grow rather than buying 2,4,5-T. And while acreage quotas are a sound reason for upping fertilizer and insecticide purchases, farmers without cash can't afford to be reasonable.

- Automobiles. Each car takes 11½ gallons of primer, 2 gallons of finish coat. If production should drop 11½ million units next year—and many observers think it likely—that's over 5 million gallons of paint business lost. (The same goes, of course, for plastics, rubber and many other chemical products sold to the industry.)

- Armaments. It's still difficult to assess the complex ramifications of defense curtailment, but it's certain that chemical products will—like steel, other metals, and countless other commodities—suffer procurement cutbacks. Will civilian production take up the slack? Du Pont's Greenewalt (CW Newsletter, Aug. 29) and Dow's Doan (CW Newsletter, Sept. 5) think so, but it's still to be proved.

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But if you sell to the textile industry, you can rub your hands in anticipation of better business than you've had in a long time. Ordering is brisk—brisker than during the past three years—and mills (especially woolen) are snapping out of their long lethargy.

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What does it all add up to? Harder, more competitive selling, since more firms—most of them with greater productive capacity—will be scrambling within each segment of the industry. But to the winners will go greater rewards, since taxes won't eat as much of the profit pie. This restored incentive will make the struggle more worthwhile.

"As others see us" is an apt phrase for a booklet just published in London and soon to be on sale here. It's a review of science in the United States, prepared by the British Commonwealth Scientific Office, in Washington—successor to the original British Technical Mission set up during World War II to facilitate exchange of technical information.

The report points out for the enlightenment of its Commonwealth readers that:

- The U. S. has upped its research and development outlay by 270% during the past decade;
- Most of the increase is due to military projects;
- Total expenditures from July '52-June '53 were budgeted at \$2,930 million;
- Over half of that money came from the federal government;
- Industrial laboratories employ 71,000 technical people;
- Of 2,800 industrial laboratories, only 7 employ more than 1,000; over half employ less than 10.

The authors observed U. S. water consumption—200 gal./day per person in some areas—"with some indications of shock." And they describe recent growth of the chemical industry as "phenomenal."

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The Army's Corps of Engineers is so in earnest about selling or leasing the chemical facilities at Louisiana, Mo., that it's placing advertisements in newspapers soliciting sealed bids for all or one of the three units:

- A 3,150 tons/month anhydrous ammonia plant operated by *L'Aire Liquide* process using natural gas;
- A 200-300 bbls./day coal hydrogenation plant—both liquid- and vapor-phase—to yield gasoline, alicyclics, and aromatics;
- A 40-80 bbls./day liquid fuels plant synthesizing a hydrogen-carbon monoxide mixture that is converted by the Fischer-Tropsch process to liquid fuel and by-products. Information source: Division Engineer, Missouri River Div., Corps of Engineers, P. O. Box 1216, Omaha, Neb.

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The U. S. Dept. of Agriculture last week withdrew its endorsement of its 1942 paint classification system (USDA technical bulletin 804).

Secretary Benson's position: Advertisers misrepresented USDA's position, implied that the department endorsed a particular product rather than simply the system under which it is classified. Hence, while USDA doesn't repudiate the technical basis of the system, it has withdrawn its endorsement of it.

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Ahead of schedule on zirconium production is Carborundum's \$21½-million plant at Akron, N. Y. Over 100 workers are now employed, and the Atomic Energy Commission has placed \$11 millions' worth of orders for the metal to be supplied over a five-year period.

Eastern and Midwestern industry men, sweltering through the past fortnight of unseasonably hot weather, could be glad as well as envious of the rains that have drenched the Pacific Northwest. Cloudbursts last week were heavy enough—assuming that rainfall from now on is normal—to virtually assure sufficient electrical power this winter for full production of phosphorus chlorine and other electrochemicals.

Firm power will now be really firm and interruptible power will be better, though some steam will have to be used later on.

... The Editors

FREE!

Basic guide book to Norton \mathcal{R} basic materials

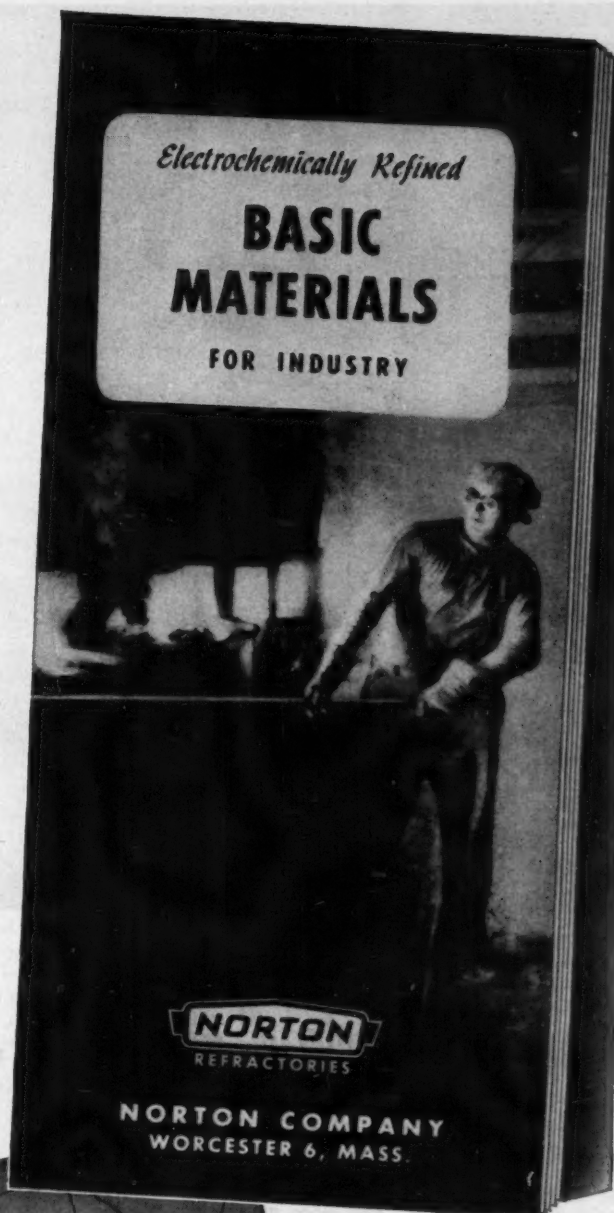
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electric furnace products
vital to industry**

Here, in one compact booklet, is a complete list of Norton electrochemically refined basic materials for industry. Twenty-two pages of detailed descriptions of compositions and properties, with actual and suggested uses for the following:

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*Available in Many Standard
or Special Forms*

Besides supplying these materials in their crude forms, more or less as they come from the furnace, Norton has extensive facilities for processing and fabricating and is ready to work with you on engineering materials to your particular requirements.



For YOUR Applications

Many of these materials are in regular industrial use. New uses are being found for others, while the rest are still being tested and developed. That's why it will pay you to read about them very carefully. In this booklet you may find exactly the combinations of properties you are looking for. For your copy of "Basic Materials" write to NORTON COMPANY, 549 New Bond St., Worcester 6, Mass.

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"Wonder-worker" for the wonder drugs

**How
Celite
filtration
assures purity,
speeds production**

When producers of antibiotics sought a filter aid that would assure removal of all mycelium and other gelatinous impurities in the broth from which wonder drugs are extracted—and speed their "put-through" in the bargain—Celite ended the search.

The effectiveness of Celite can be attributed to these important factors which make it unique among filter aids:

Carefully processed from the purest deposit of diatomaceous silica known, Celite is available in nine standard grades—each designed to trap out suspended impurities of a given size and type. Whenever you reorder, you are assured of the same uniform, accurately graded powder re-

ceived in your initial order. Thus, with Celite, you can count on consistent purity in your filtrates—at highest rate of flow—month after month, year after year.

The manufacture of wonder drugs is just one of the many processes in which consistent purity and faster filtration have been obtained through the use of Celite. Your own filtration problem, regardless of the product involved, can no doubt be solved with the proper grade of Johns-Manville filter aid. To have a Celite Filtration Engineer study your problem and offer recommendations, without cost or obligation, just write Johns-Manville, Box 60, New York 16, N. Y.

Celite is a registered Johns-Manville trade mark



Johns-Manville CELITE

FILTER AIDS

BUSINESS & INDUSTRY . . .

Slowdown Rundown

Chemical	% over Jan. '51	% of goal under way	Chemical	% over Jan. '51	% of goal under way
Acetic acid	20	90+	Pentaerythritol	63	90+
Acetone	22	90+	Perchlorethylene	71	90+
Aniline ¹	27	90+	Phenol	82	90+
Anthraquinone vat dyes ²	30	90+	Phosphate rock ¹	43	90+
Benzene	74	90+	Phosphorus (elemental)	71	90+
BHC, tech.	36	90+	Phthalic anhydride	61	90+
Butadiene ¹	165	90+	Plastics materials	119	50 to 74
Calcium chloride ¹	58	90+	Polyamide chemicals		
Carbon, activated	30	90+	Adipic acid	58	90+
Carbon black	53	90+	Cyclohexane (85%)	103	90+
Chlorine	57	90+	Adiponitrile	131	90+
Chromite, chemical ¹	42	under 50	Hexamethylenedia-		
DDT	52	90+	mine	131	90+
Ethylene glycol	63	90+	Potash ¹	43	90+
Ethylene oxide	77	90+	Quinoline	241	under 50
Formaldehyde	26	90+	Resorcinol ¹	NA	50 to 74
Glycerine	24	90+	Sebacic acid ¹	67	90+
Hexamethylenetetramine	56	90+	Soda ash	NA	90+
Hydrofluoric acid	28	90+	Sodium bichromate	14	90+
Hydrogen peroxide	97	90+	Sodium chlorate	113	90+
Ethyl alcohol	3	90+	Sodium cyanide	NA	90+
Ketone, methyl ethyl	17	90+	Styrene monomer	93	75 to 89
Ketone, methyl isobutyl	19	90+	Sulfur ³	27	90+
Lithium compounds	162	90+	Sulfuric acid	31	90+
Methanol, synthetic	30	90+	Synthetic fibers ³	200	90+
Methyl chloride	112	90+	Tetraethyl lead ¹	36	90+
Methylene chloride	179	90+	Ethyl chloride	47	90+
Naphthalene	73	90+	Ethylene dibromide	75	90+
Nitrogen	79	90+	Titanium dioxide ¹	31	90+
Octyl alcohols	56	90+	Toluene	123	90+
Oxygen	59	90+	Trichlorethylene	44	90+
Penicillin	140	90+			

Target date for all goals is Jan. '55, except (1) Jan. '54, (2) Jan. '53, and (3) Jan. '56.

Expansion Slowdown

"Why this longing, this forever sighing for the far-off, unattain'd and dim?"

These lines, penned by poetess Harriet Sewall back in 1840, this week are getting a century-later seconding by Republican officials who have charge of the government's mobilization program.

The chances of receiving fast tax amortization certificates are getting dimmer and dimmer. And producers of many an item will discover that further write-offs are out completely.

The Office of Defense Mobilization had set up goals for expansion of 233 different products or industries. Only 75 of these are more than 90% complete. The rest may be too dim and far-off, for ODM Chief Arthur S.

Flemming has said publicly that he "expects to call an end soon to a rather large part" of the program.

A great many of the chemical goals (see table) are already largely met. But the ones that aren't nearing completion may be killed; so manufacturers who have write-off applications in the works, or who still plan to apply, may be out of luck.

The chemical goals that may be rubbed out include styrene monomer, resorcinol and the plastics materials catch-all.

Renewals, Too: But for many companies that received their certificates months ago, the important part of ODM's stringent policy will come on renewals. Construction on certified projects is supposed to begin within six months after the certificate was

issued. ODM has been renewing most unused certificates, but now plans to renew very few.

As things are running now, ODM is still receiving an average of 55 new tax amortization applications, and certifying 68 out of its backlog. This is considerably below the peaks: 823 applications per week (Mar. '51), and 296 weekly certifications (June '52).

Over-all Policy: Flemming's pronouncement actually marks the end of the government's post-Korea drive to build the industrial base.

And for the future, it seems that Flemming and ODM will have less to do with mobilization expansion than other facets of the Eisenhower cabinet.

The major factor in the coming cut in tax amortization certificate issuance is the opposition of Treasury Secretary George Humphrey to this form of expansion aid.

ODM's part in future top-level policy will also be lessened.

The agency is shelving its uncompleted report on present U.S. production potential, which was to spotlight "gaps" in our industrial capacity—the key to the future mobilization programs. Its objective: to match up projected production and construction levels for various military, defense-supporting, and civilian programs with existing raw material, fabricating, and assembly-plant facilities. This would then show up specific deficiencies—or "gaps" in our capacity to meet future emergency needs.

But within the past month, work on the study has been practically halted. The deadline has long since passed; the study itself is on dead center, and further progress is not expected soon.

The various civilian claimant agencies have submitted their estimated full mobilization requirements to ODM, and the capacity study has been "done in general terms." But that's about all.

Planning projects are relatively inexpensive in terms of both money and manpower—and the lack of mobilization plans has been loudly criticized since the onset of both World War II and the Korean conflict.

Vocal Levels: Since the Wilson-Kyes team has taken over the Pentagon, it has been by far the strongest voice in mobilization—and its actions have consistently favored im-

mediate results at the expense of future planning.

Wilson and Kyes claim they're straightening out a mess, and trimming billions of unnecessary spending. They think the previous administration went too far in spreading out defense contracts, used the arms production programs as an economic crutch, and played politics with military procurement in general.

They've been saying that long-range mobilization planning must wait until the new Eisenhower-designated joint chiefs of staff comes up with a new assessment on strategic war planning.

Triple Reaction

There's been a major realignment among the teams studying the feasibility of atomic power generation. The change underscores the chemical denominator of one of the plans.

The events can be characterized as a fission, a fusion and a new particle:

- Monsanto Chemical, which had been paired with Union Electric Co. of Missouri, in studying power generation, had asked approval to go ahead with its work, alone.

- The fragment from this team, Union Electric, will join with two other teams in carrying out a joint project. American Gas & Electric, another utility firm, will also join the group. Other members: Bechtel Corp., Pacific Gas & Electric, Commonwealth Edison of Illinois.

- A new team will also undertake a study. Participants are Walter Kidde Nuclear Laboratories, and Duquesne Light Co. of Pittsburgh.

Monsanto has repeatedly discussed with AEC officials the possibility of constructing a reactor to produce commercial electric power, and plutonium for sale to the government under a 5- to 10-year contract. After contract expiration, the plant would be operated to produce competitive electric power without further sale of plutonium or U-233 as by-product. Enthusiasm for such a dual purpose plant has not been great away from the Monsanto bailiwick.

The teams not changed in these shifts are the Foster Wheeler-Pioneer Service group, which has been at work for only a few months, and the Dow Chemical-Detroit Edison group, in whose studies 24 other companies participate.

The rearrangements in group make-up are still subject to approval by the Atomic Energy Commission. It's likely, however, that AEC's o.k. will be little more than a formality.

Changing the Balance

The relative merits of vertical and horizontal integration have often been debated by chemical management—but these debates have been undertaken by the companies themselves. Now, not only is a chemical firm involved in an argument it didn't start, but the matter may also have profound effects on a broad spectrum of other companies.

The vertical-horizontal debate this time involves labor unions, and touches on the basic differences between the AFL and the CIO. At issue is whether the National Labor Relations Board should change its policies to allow the carving out of small, specialized bargaining units (usually AFL) in industries that bargain with one big union (usually CIO).

Five different unions are interested in representing all, or certain segments of the workers at American Potash & Chemical's Trona, Cal., plant (CW Newsletter, Sept. 5). The NLRB has scheduled hearings on this for Sept. 15, but probably will postpone them because of conflicts with conventions of some of the unions involved.

There is a good deal more at stake than just the representation at Trona. The decision here could presage a decided change in union balance of power. At present, the NLRB has a rule that AFL unions may not carve small craft units out of large, plant-wide groups in basic steel, aluminum, wet-milling and lumbering. The decision here might extend this to basic chemicals (and by inference, to most

other fields) or it might allow small craft groups in areas where now prohibited.

For this reason, in addition to inviting testimony from the unions involved—the AFL Chemical Workers; the left-wing, independent Mine, Mill and Smelter Workers; the AFL Machinists; AFL Electricians; and AFL Operating Engineers—NLRB has asked statements from Manufacturing Chemists' Assn., the National Assn. of Manufacturers, the U.S. Chamber of Commerce and the over-all AFL and CIO organizations.

Man Behind the News: Reason for NLRB consideration of the over-all policy question is most likely a reaction to the strong dissenting views of one board member, Ivar H. Peterson. Peterson (with a diverse background of eight years as a lawyer with NLRB, service as labor relations director for the National Assn. of Broadcasters, and three years as Sen. Wayne Morse's executive assistant) has expressed deep concern over NLRB's readiness to carve craft units from long-organized plant-wide units.

His strongest dissent came when the board's majority allowed the breakup into a dozen small units of a plant-wide union local that had existed for 16 years at W. C. Hamilton & Sons, a Miquon, Pa., paper company.

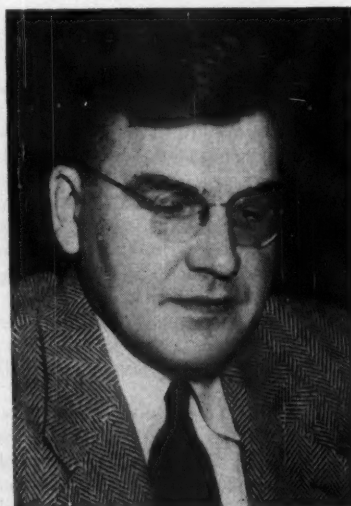
Peterson thinks that where employees have bargained through one union, other unions seeking to disrupt established patterns should have to show that changes would serve the best interests of the craft workers.

Individual Positions: The AFL, of course, is strongly opposed to any limitation to the granting of craft unit elections. CIO, on the other hand, would like to see present plant-wide units protected. It wouldn't mind an at-least-tacit encouragement by NLRB to extend such bargaining.

An AFL victory could mean management would have to bargain with many units, not one. It could prove more costly because of the higher wage rates commanded by AFL craft unions. It could mean an increase in jurisdictional disputes.

A CIO win might provoke the AFL not to go through with the no-raiding agreement slated to go into operation next January between AFL and CIO. This could mean bitter jurisdictional squabbles, too.

Small wonder many companies feel that any change in status quo should be avoided.



NLRB'S PETERSON: Reconsideration due.



Cash on Main Street

To determine how much in hard cash its plants in specific regional areas are pumping back into the local economy, Du Pont Co. is conducting its third annual economic survey. Returns from the first seven states reporting show a flow of over \$338 million back into circulation in 1952; plants report they bought everything from coal to pinking shears and hair dryers. It all adds up to a healthy shot in the arm for local public relations, is a strong counter-argument against the distrust of big business often prevalent in small communities. Leading the contribution-to-economy parade are 21 Du Pont plants and laboratories in New Jersey, which generated over \$116 million in direct buying power in the past fiscal year. Broken down, the figures are even more inviting ammunition for public relations artillery. While in terms of employment Du Pont in New Jersey amounts to less than 2% of the state's manufacturing industries, materials and services bought by Du Pont—"entirely within the state"—ran up to \$41 million. Some 5,000 different companies shared in a cut of the take, sold a range of commodities—hardware, building supplies, carbon black, lime sludge, fertilizer, dry ice, food, soaps.

In addition, an economic lift provided by payrolls amounted in 1952 to \$75 million—paid to 15,200 individual employees.

Survey requirements, Du Pont officials in Wilmington note, demand that

in New Jersey (as in all other states) local plant purchases be segregated from those of all other company buying; screened out also are all purchases made from warehouses of out-of-state manufacturers, as well as transportation charges. Further, for the benefit of community and plant relations, Du Pont's survey counts up plant purchases and payrolls individually, points out the widespread benefit to both community and industry dollarwise.

West Virginia and Virginia records (lumped together for geographic reasons) show "one of the highest" bills for coal and chemicals alone. But that's not all. In addition to expenditures for such staple items as paint, paper products, and electrical supplies, plants located in the area spend significant amounts for housekeeping (such as cleaning services) and for odd items like razor-blade knives (for cutting nylon filament) and special-grade rubber bands (for binding nylon brush-bristling material). Last but not least: a tab for hundreds of thousands of pints of ice cream, milk, soft drinks for employee cafeterias. One plant even needed 67 million colored paper discs—says it uses them for nylon identification.

Disbursements in the state of New York totaled up to almost \$55 million last year; over 40% was for purchases—the rest was salaries and wages paid to 6,700 employees. The Niagara Falls electrochemicals plant spent the greatest chunk—close to \$11 million

with 760 suppliers in its immediate area, \$1.5 million more with 280 other New York businesses. Money-in-circulation totals were boosted by a payroll in excess of \$26 million.

Tabulations in other states reveal slightly less impressive, but locally just as enticing, figures. About \$45 million flowed into the business life of Tennessee and South Carolina from six Du Pont plants. While the bulk of all purchases were for standard industrial items, included also were wheelbarrows, fishing rods, billfolds—all bought locally.

Buyers for Texas plants say they did business with more than 1,800 companies, and while (as in previous years) the dollar value of purchases was largest in the petroleum and natural gas industries, their plants required king-size quantities of a wide variety of materials. The Sabine River Works chalked up the biggest record, put over \$11 million into circulation in the Orange-Port Arthur-Beaumont area alone. Elsewhere in Texas, buyers at Sabine River spent another \$9 million—for such things as insulation materials, provisions for a non-profit cafeteria, building supplies.

Local merchants thrive on publication of such reports; public relations officials find their jobs considerably brightened by resounding civic approval. From any angle, Du Pont contends, such economic roundups spell out clearer, more factual information about the part its operations play in today's community life.

Detailing the Cutback

The 8% trim in funds for the Food & Drug Administration has brought some curtailment of FDA functions, as predicted when the appropriation was passed (CW, Aug. 8).

Last week, FDA Commissioner Charles Crawford, speaking to the American Bar Assn.'s food, drug and cosmetic law branch, detailed what the cutback in the agency would entail. Among his comments:

"We are completely revising our project schedules . . . to cause the least possible risk to consumer welfare."

"We cannot lower our already inadequate coverage in fields relating directly to health." This includes drugs with dangerous side reactions, drugs and devices misbranded by false and misleading curative claims.

So, "... we must ignore all but the most flagrant economic cheats, and curtail to some extent our work against filth and decomposition. Progress in the formulation of food standards will



Salt, Sun, Soap

NEAR Mexico City's airport, on the desiccated bed of ancient Lake Texcoco, Soso Texcoco, S. A.'s huge solar evaporator is turning from 100-200 tons/day of soda ash, caustic soda, sodium chloride, potassium salts, bulk of which goes to soapmaking.

Of special note to biochemists: contrary to rule there (that salt solutions of over 1% will not support life) the 10-15% solution accumulating in the evaporator has been noticed to



burst forth unexplainably with primitive types of vegetable and animal life. Processing plant (above, center) is shown larger in small illustration.

suffer, too, for a substantial amount of field study is required before proposals can be developed for hearing."

Discussing legislation proposed to Congress this year, Crawford made these points:

On the factory inspection provision, which was enacted into law, "an attempt by the Senate to define the scope of inspections of prescriptions was rejected by the House, which had covered this subject only by discussions on the floor." This history of legislative intent will be important in future court cases, he stressed.

"When the time comes . . . to discuss bills to control new substances in foods, we should also give consideration to new knowledge about toxicity of components that have been generally accepted in the past as safe. . . . Late last spring the producers of coumarin told us they were withdrawing it from food use because of evidence of its toxicity to laboratory ani-

mals. . . . We cannot afford to be complacent, and none of us can 'go it alone.' The public welfare depends on the combined protective efforts of government and industry."

COMPANIES

Mississippi Chemical Co. has been given a big boost in attaining its expansion program by the sale of \$300,000 in Yazoo County, Mississippi, bonds—second section of a \$750,000 allotment authorized by Mississippi law last year. The remaining \$150,000 will be sold as needed by the chemical plant, and as county requirements are met. Terms of the issue: bonds bear an interest rate of 3.197%, plus accrued interest, are dated Sept. 1, '53.

American Cyanamid Co. has applied for a Department of the Army permit to build a dock on its property in

Savannah (Ga.) Harbor. The proposed dock will be 40 ft. wide, 400 ft. long. Plans have been filed, open to objections from interested parties on navigational grounds.

Texas Gulf Sulphur Co. is spending over \$100,000 to counteract fumes from oil wells in the Spindletop, Tex., area. Taking up the bulk of the expenditure: enlargement of waste water-purifying facilities.

Complaining residents of the Beaumont region, objecting to noisome hydrogen sulfide fumes said to arise from Texas Gulf operations, spurred the move.

Merger of the West Virginia Pulp and Paper Co. and the Hinde & Dauch Paper Co. was approved in separate board meetings last week, subject to final approval of stockholders. Plans include: operation of Hinde & Dauch as a subsidiary of West Virginia; stockholders of H&D to receive for each share of their present stock one and one-third shares of new West Virginia common—after West Virginia splits four for one.

The 1952 annual reports show West Virginia with sales of over \$85 million, Hinde & Dauch with sales of over \$43 million.

EXPANSION

Plastic Pipe: Carlon Products Corp., Cleveland, O., has set up facilities for the manufacture of plastic pipe and fittings in Klamath Falls, Ore. Production should be well under way by mid-September.

Ferrochrome: Pacific Northwest Alloys, Inc., has started producing ferrochrome at its Mead plant near Spokane, Wash. Before Pacific Northwest leased facilities at Mead, the government produced magnesium there; company officials say they could switch back to magnesium production if the need arises.

One of the plant's four arc furnaces is already devoted solely to ferrochrome production, will turn out close to 1.5 million lbs./month before the end of the year. Under present operation plans, one furnace will be kept producing ferrosilicon.

Levulinic Acid: Quaker Oats Co., Chicago, is doing research work on the production of levulinic acid, contemplates building a pilot plant to produce larger quantities to step up further investigation. Cost, capacity, site of the pilot plant have not been revealed.



CSC makes more **METHANOL**

With the opening this month of the valves of the newly completed \$20 million facilities at Sterlington, Louisiana, Commercial Solvents Corporation becomes one of the world's largest producers of methanol, for sale to meet the growing needs of expanding American Industry. For steady, dependable, large-volume supply of methanol, CSC is your logical source. High-quality CSC methanol, produced from natural gas, is being supplied at a minimum purity of 99.85% in tanker, barge, tank car, tank truck and drums to all parts of the United States from conveniently located bulk and distribution points. For further information contact the Industrial Chemicals Dept., Commercial Solvents Corporation, 260 Madison Ave., New York, N. Y.

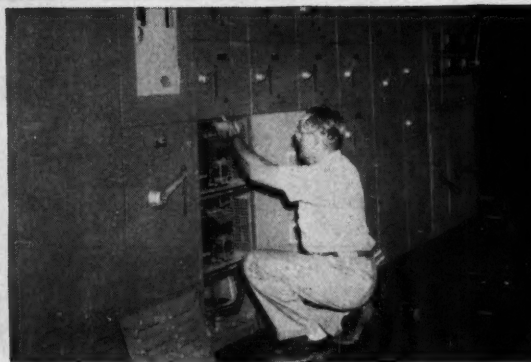
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AMMONIA • NITROPARAFFINS • SOLVENTS • PLASTICIZERS • INTERMEDIATES



This Westinghouse high-voltage switchgear automatically and rapidly clears trouble at Standard Oil's Lima Refinery. If there's a momentary outage, the load is reapplied in segments.



Westinghouse control centers minimize maintenance problems and give Mississippi Chemical the advantages of grouped control. Individual units can be installed or removed with file-drawer efficiency.

Petroleum and chemical companies confirm:

Westinghouse equipment provides dependability

Our engineers help you get dependability by combining Westinghouse electrical equipment with creative system planning. Here's proof.

Sohio's Lima Refinery got power dependability without paying extra for stand-by capacity. Westinghouse engineers helped develop a power system which provides a fast restoration of service after interruptions. Westinghouse supplied a control system that automatically and rapidly clears trouble. This system successfully handled twelve power interruptions during the first nine months of operation, without loss of refinery production.

Mississippi Chemical officials called on Westinghouse to help them get a complete "packaged installation" with the best electrical equipment at no extra cost. One feature was that Westinghouse control centers were installed in nonhazardous locations throughout the plant. This gave Mississippi Chemical the advantages of centralized control without paying for more expensive explosion-proof equipment.

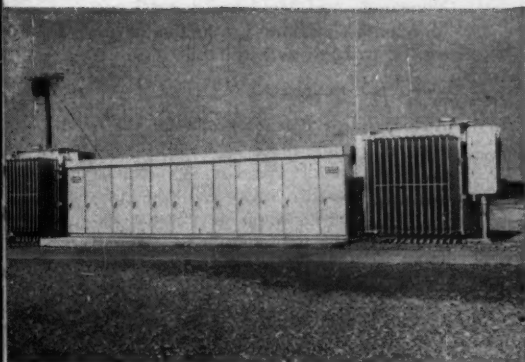
Texaco's Eagle Point Refinery got top-system dependability, efficiency and flexibility for future expansion. Westinghouse turbine-generators supply all the power, but there's also a tie-in with the local utility for emergency purposes. Dual-feeder cables carry power to all Westinghouse outdoor load centers. If one faults, the other can handle the full load. All Eagle Point has to do for any plant expansion is add substation capacity.

American Cyanamid and Westinghouse engineers worked out a power distribution system that prevents outages. If there's trouble on any feeder, power is switched to another. If a substation faults, other substations carry the load through cross connections. This system can be easily and inexpensively expanded as the plant grows.

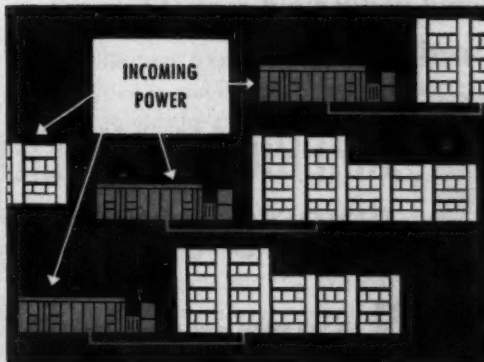
These solutions are only four examples of how Westinghouse equipment and services can meet your power distribution problems. If you'd like more information on the above, or other installations, call your Westinghouse representative. Or write to: Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

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B & I

Sign of Unrest?

Russia's chemical industry is taking the rap for the Soviet Union's "continued production of poorly finished textiles."

Buck-passing began when Premier Malenkov sharply criticized the quality of Russian cloth in his August speech before the Supreme Soviet. Said Malenkov: "... while Russian textiles are fairly durable, their finish and appearance leaves much to be desired. It's no wonder Russian consumers prefer goods of foreign manufacture . . ."

Textile industry officials have been quick to plead that they're handicapped by the failure of the chemical industry to turn out a sufficient quantity and variety of fast dyes. Other complaints: "a severe shortage of chemical compounds to make cloth resistant to shrinkage, waterproofing, moth-resistant preparations."

The aniline dye industry has come in for the biggest attack, is charged with "extremely serious inadequacies." Sulfur dyes for cotton cloth are suspected of containing impurities impairing their durability and brightness.

Pravda, backing the textile industry's clamor, says in effect that the chemical industry had better look to its production techniques, "primitive compared with Western standards."

FOREIGN

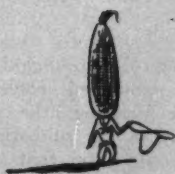
Sulfur/Brazil: Brazil's Special Committee for Petroleum Chemical Products is considering building a plant to produce 15-25 tons of sulfur daily from the residual gases of the Cubatão refinery.

Paint/Venezuela, Mexico: Sherwin-Williams will build two new plants in Venezuela and Mexico at a total cost of over \$1 million. Production is expected to begin late this fall.

Automobile Paint/Venezuela: The Montana paint plant in the Los Cortijos section of Caracas, Venezuela, will manufacture nitro-cellulose automobile paint as soon as present expansion plans are completed. Annual production by Jan. '54 should approach 150,000 gal., is being plugged as "first output in Venezuela."

Fluon/Great Britain: Imperial Chemical Industries, Ltd. has opened a plant to produce polytetrafluoroethylene under the brand name, Fluon.

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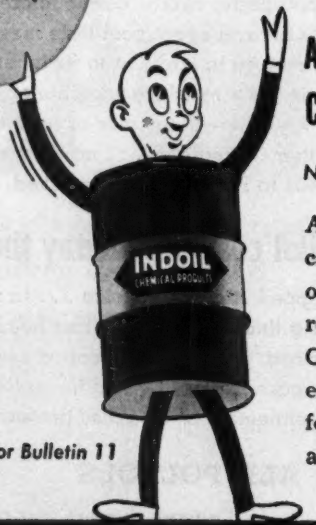
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B & I

Italian Collaboration/Brazil: The Nitro-Quinisca Brasileira Co. is erecting a network of new chemical plants in Brazil on plans prepared by Italian firms, and with their technical aid.

Building, assembly and operation, is under the direction of the Brazilian branch of the Compahia Brasileira Sclacca e Piacentini, of which all the engineers are Italian.

Plants now under construction: aluminum (output 30 tons/day); caustic soda (75 tons/day); concentrated nitric acid works (15 tons/day); synthetic ammonia (25 tons/day); polyvinyl chloride (6 tons/day); urea (25 tons/day); sodium sulfide (2 tons/day); liquid chlorine (8 tons/day).

LEGAL

Suit Over Suits: Wyandotte Chemicals has filed suit in Michigan federal court against Local 12270, United Mine Workers, asking \$250,000 damages arising out of a wildcat strike of 110 pipefitters responsible for maintenance work at Wyandotte. The strike was caused by a disagreement over wearing rubberized clothing. The pipefitters demanded cooler, more comfortable clothing; the company refused, saying the rubberized suits were the only type that complied with National Safety Council standards. The damages are asked for interference with production of caustic soda and chlorine; and hampering construction on a \$20-million expansion project.

Ready to Roll: The Criminal Court trial against National Carbide Co., charged with air pollution in Kentucky, opens this week. July grand jury action has indicted the company for violation of Kentucky's untested laws against air-pollution. The claim: that National Carbide has been allowing smoke and vapor to spew forth from its main smokestack "at a greater density than the law allows."

Circuit Judge Kindrick Alcorn (Stamford County), originally scheduled to hear the case, has been disqualified, has been replaced by T. C. Carroll, Shepherdsville attorney, as acting judge.

Curb on Would-Be Chemists: City fathers of Rochester, N.Y., disturbed by the youthful enthusiasm of teenagers concocting homemade explosives, have determined to take immediate action, are drafting an ordinance to make it harder for minors to obtain the necessary ingredients.

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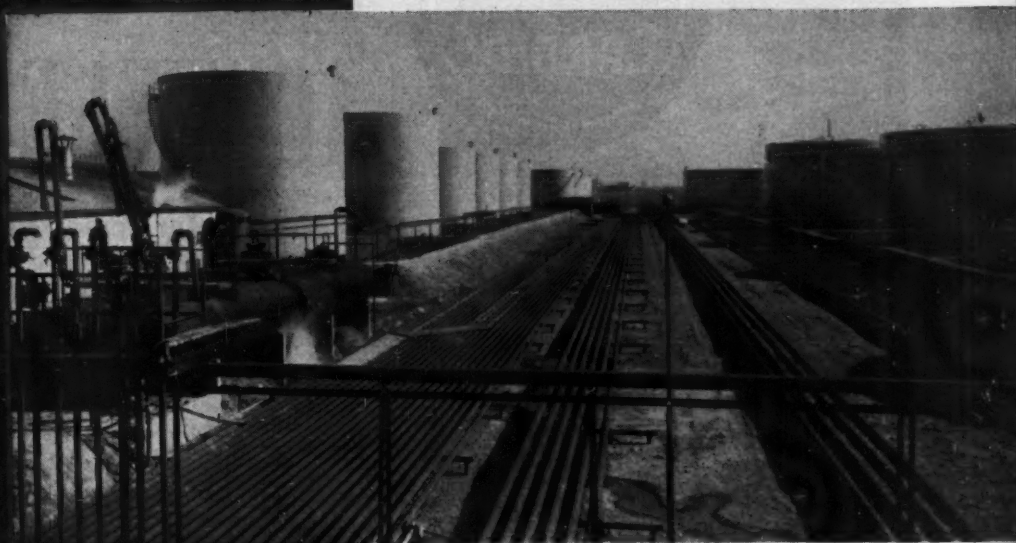
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National Carbide is one of the world's larg-

est producers of calcium carbide and acetylene. Its newest plant at Calvert City, Kentucky, will be capable of turning out approximately 300,000 tons of calcium carbide yearly—the acetylene equivalent of which is around 2,700,000,000 cubic feet. Potential users can be supplied acetylene by pipeline at available adjacent properties. National Carbide also furnishes calcium carbide to chemical producers for generation into acetylene at their individual plants.

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Bridging the Gap Between Home and Job

Planning an open house in the chemical industry in recent years has been a matter of sending up trial balloons. Some ideas have panned out handsomely; others have not. But one fact remains fixed: the company's reputation and standing in the community is of vital importance to its business operations. To slight employee-community relations is to court real danger.

Smith, Kline & French Laboratories, Philadelphia, well cognizant of the value of its open-house ventures, will try a new twist this year, expects the idea to appeal to employees and public alike. The angle: on a Saturday preceding a Tuesday holiday, open-house festivities will be held with workers on the job. Employees will then be given the following Monday off, turning the weekend into a three-day holiday. Off-the-cuff reaction of all concerned adds up to "it sounds like a great stunt."

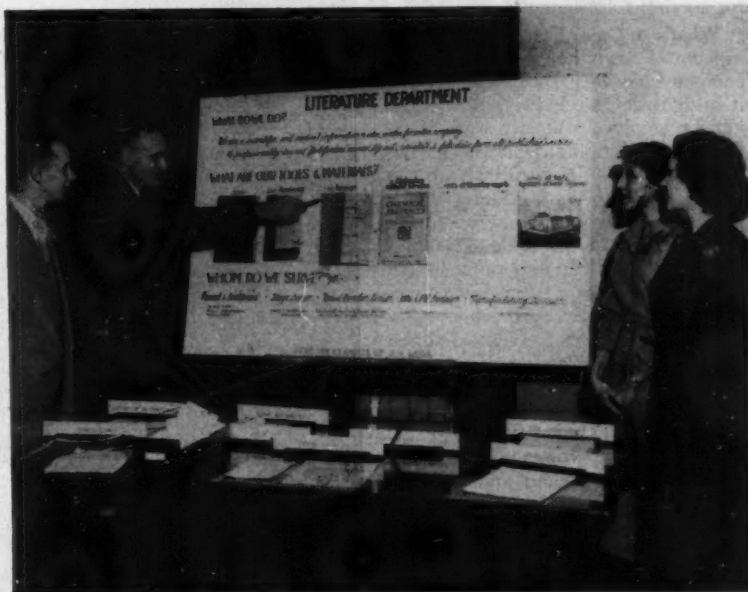
SKF first toyed with the idea of running an open house back in 1949, used it to signal the opening of the company's \$8-million research labs and manufacturing facilities. Another opportunity (opening of a new wing of the building) presented itself in 1951, led to a second plunge into "open housing," convinced SKF officials that a periodic visiting program for employees' families and friends was an indispensable pillar of its public relations edifice.

How It Works: SKF thinks an overall plan, prepared as a guide for management personnel on all phases of its program, is a must. The plan outlines objectives and methods of operation, names members of specific committees and their individual responsibilities. Usually the committee is made up of seven members—each representing a division of the company. Jobs are assigned arbitrarily, are completely spelled out. Included are:

- Preparation of invitations, tickets, parking stickers, publicity.
- Product exhibits.
- Point of interest displays.
- Determination of tour routes; preparation of explanatory signs, directional markers.
- Traffic guides; their operational procedures.
- Disposition of protection forces for safety; arrangements for special first-aid services.
- Arranging for parking facilities; physical appearance of plant and property.



BASIC OPEN-HOUSE RULES: Making guests feel welcome is of vital import to young and old alike; you can't overdo the handshake and the smile of greeting . . .



. . . but at the same time you have to get your story across—clearly—at points where there's no special equipment to catch the visitor's eye.

- Checking catering service for refreshments; selection of souvenirs, decorations, flowers.

- Arranging for greeters, ticket takers, personnel to distribute souvenirs.

- Establishment of a central service headquarters for messages and information.

Main problem, say SKF open-houses, is to keep visitors moving in some semblance of order. Since over 3,000 visitors are likely to show up in a single day, guided tours have proven infeasible. Instead, a slew of directional signs are provided; areas likely to engender confusion are roped off.

In operation, the system works "from the top down," gives the visitor at one and the same time a complete picture of company operations, and more particularly the steps a new product goes through from research to final marketing.

Guests enter the lobby, present their tickets to employees selected for "registration detail." Simultaneously, they're welcomed by greeting teams, made up of members of the company's management, and employees with the longest terms of service. Proceeding to the coat-checking area, a second team of "greeters" takes up the amenities, steers tourers in the direction of elevators that carry them up to the first exhibit.

The downward trek (on foot) normally takes about two hours, is eased by question-answering traffic guides stationed in all strategic areas. A section of the first-floor area is set aside for serving refreshments.

What's to Gain: Foremost of all the aspects of open houses profiting the company, say SKF spokesmen, is that it bridges the gap between home and job for employees at any work level. Exults one shipping department leader, "When the company holds an open house, it gives my family a better picture of what I do . . . then I'm not whistling in the dark at home." Says another: "It's important to me to be proud of what I'm doing, how I'm doing it. These open houses give anybody who wants to see, wide-open opportunity to do so."

From a purely mundane angle: in labor-pinched areas (or in areas where competition for available manpower is fiercely competitive) where recruitment is a serious and growing problem, open-house parties can be turned into a fine recruitment device. Pensioners, says SKF, are often the best salesmen. They're apt to flock back in droves "for a look at the old place," prove valuable company friends in the community.

Adding to the Castle

This week, workmen were erecting a single-story brick and concrete building on Delancey Street in south Newark. The building, while offering no startling architectural innovations, was, however, a new turret on the already complicated and fascinating Teutonic castle built by the platinum king, the late Charles Engelhard.

But Engelhard's claim to recognition does not solely depend on platinum, though his metal dealings built Baker & Co. into the largest precious metals concern in the world.

More important—if also more obscure—is his construction of Engelhard Industries, a business empire probably worth close to \$100 million. Not only, though, did this German immigrant build such an empire, but at the time of his death in 1950, he had also set aside enough money to pay the not inconsiderable estate and inheritance taxes on it.

Engelhard's Alphabet: Figures alone can't portray the scope of the Engelhard holdings. Its diversity is a better measure. The group includes these firms:

- Baker & Co., is undoubtedly the most important of the units. The precious metals house is by far the largest factor in U.S. trade in platinum and platinum group metals such as palladium and iridium. Baker is the exclusive agent in this country for International Nickel's Canadian production. It also imports from such countries as the Union of South Africa.

Baker has been a leader in platinum catalyst research, and has certainly

done much to promote industrial use of the metal. The Delancey Street, Newark, facility will make a catalyst for petroleum reforming developed jointly by Baker and Sinclair Oil.

Another incidental product of Baker is cadmium batteries.

- Hanovia Chemical & Manufacturing is divided into two parts. One division makes ceramic paints containing precious metals. The other fabricates quartz glass apparatus, also has as a primary activity, the manufacture and sale of ultraviolet lamps.

- Nieder Fused Quartz, Amersil Co., and Optosil Co. are three other Engelhard units that have quartz as common denominators. Their main fields of endeavor are electrical, opaque and optical quartz, respectively.

- American Platinum Works, like Baker, is in the precious metals field. In addition to producing and selling the metals itself, it produces wire, sheet and shapes in the metals, plus necessary solders and fluxes for metal fabrication.

- Irvington Smelting and Refining smelts and refines precious metals on a custom basis and for its own accounts. This company also uses its furnace know-how to recover copper from scrap and produce copper sulfate by reacting the metal with sulfuric acid.

- Azoplate Corp. is the most recent acquisition of the Engelhard group. It was formerly Keuffel & Esser's litho-offset and chemical division. It makes lithographic chemicals and presensitized offset printing plates, which obviates the need for coating equipment in the printing plants.

- Charles Engelhard, Inc., makes scientific and industrial instruments, specializing in pyrometers and gas analysis devices.

- Union Plate & Wire, into which another company, D. E. Makepeace Co., has just been merged, manufactures rolled and plated materials that include precious metals.

- National Electric Instrument Co.'s specialty is diagnostic and medical instruments, but such an item as a cautery pistol has also found use in cutting nylon and other plastic fabrics.

- Export companies: both Hanovia and Baker have manufacturing and sales subsidiaries in Canada and Great Britain, while Engelhard Industries, Inc., conducts similar operations in Brazil, Switzerland, Denmark and Scandinavia. Precious Metals Development, Ltd., in Johannesburg is the



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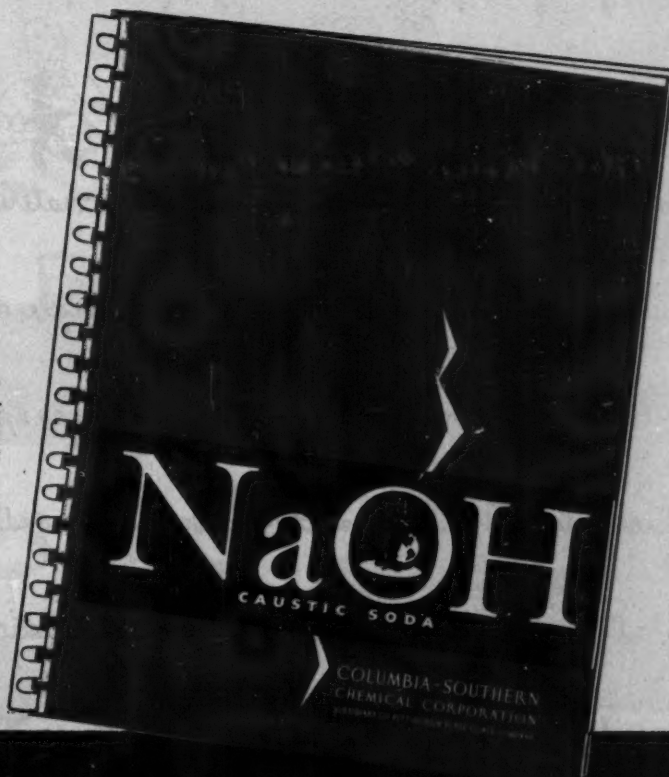


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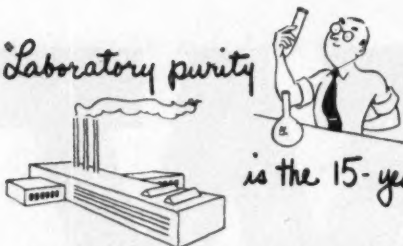
Methods of Analysis

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B & I

South African arm of Baker & Co. Inactive subsidiaries exist in France (Bureau Pour l'Expression des Metaux Precieux), Italy (Societa Anonima Baker) and Japan (Baker-Hakkin K.K.).

In addition to these companies, the group also includes a real estate holding company—East Newark Realty—and a publisher—Alpine Press. This publishing arm, now being dissolved, was set up by Engelhard to handle the technical printing for his companies. It also got him discounts on books ordered from other publishers.

The corporate structure is fairly complicated. One example: Hanovia owns some stock of Baker; Baker, in turn, owns better than half the stock of American Platinum Works; APW and Baker then own Irvington Smelting. Since the Engelhard family owns almost 100% of the stock of all the companies, such complexities now seem impractical. Undoubtedly, Engelhard had good reason for setting up things this way, even if the reasons aren't too well understood by those in the company today. As one employee puts it: "Dr. Engelhard and the business grew up together."

Companies in Transition: Naturally, the death of a man who has been extremely active in company affairs means readjustment. So it was with the Engelhard companies.

The heir-apparent was Charles Engelhard, Jr., Princeton-educated (Ivy), Air Force-commissioned (captain) who was named executive vice-president of the various corporations in 1946.

But though he had begun the grooming of his son, father Engelhard continued his active supervision. Curiously, Engelhard had more time to devote to business in the years that just preceded his death in 1950. On doctor's orders, he had been forced to give up horseback riding, his relaxation.

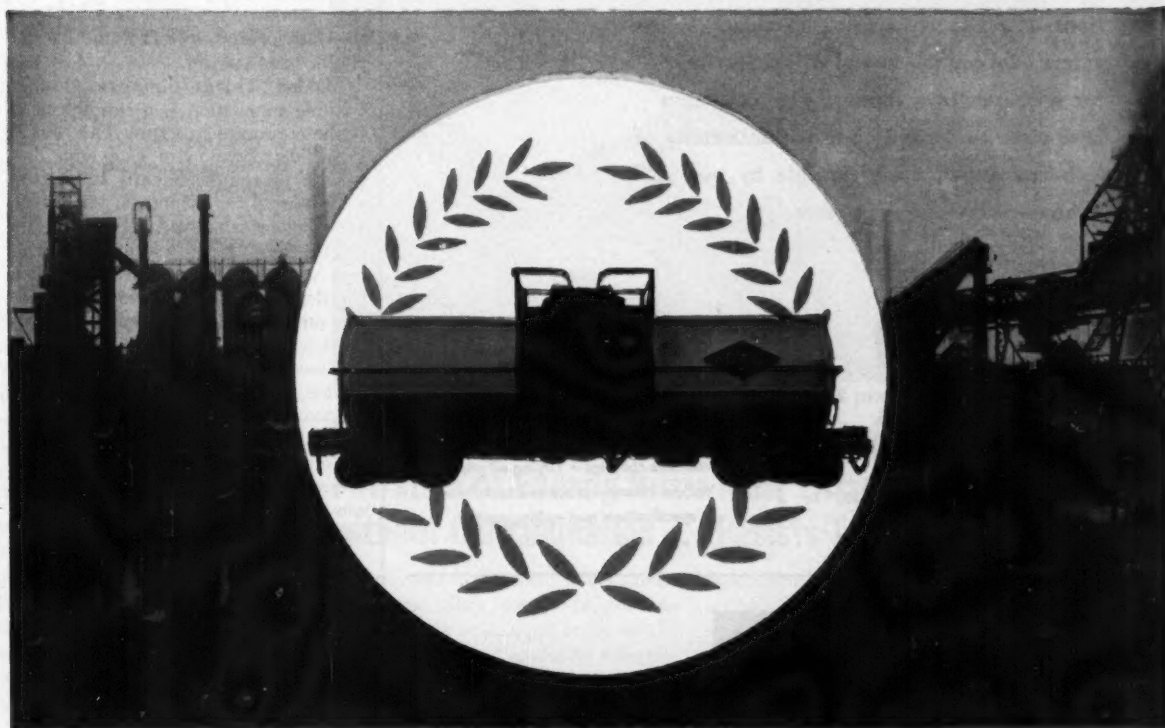
Daily Schedule: A typical day in the life of the elder Engelhard would include a tour of plants in Irvington, East Newark and Newark. The only days when such a tour would not take place would be on those when he was looking in on units in Massachusetts or on Long Island, or was checking on manufacturing and sales offices abroad.

Knowing as much as he did about the day-to-day operations of all the companies, he served as the primary channel of coordination between them. But the passing on of the 40-odd years of operating experience in five years is a virtual impossibility. Thus, his death and the election of his son as president forecast some



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B & I

changes in corporate operation.

These can be summarized as a widening autonomy for the various operating units and an increase in the number of persons who share management decisions.

One indication of change was the adoption of an executive committee to help President Engelhard with top policy decisions. Such a committee, in existence for less than a year, adds a staff function to the organizational setup: where a year ago, approval of, say, a new plant for Hanovia would come after consultation between Engelhard and Hanovia's management, the matter would now go to the executive group. Engelhard would have their advice and vote to guide his decision.

Making Things Simpler: Another possible innovation is a simplification of the corporate structure. This would allow identification of each unit first as one of the Engelhard Industries, and second as Hanovia, Irvington Smelting or whatever.

The need for a closer identification was recently underscored when Charles Engelhard, Inc., was low bidder on a multimillion-dollar government contract. Since the company's net worth is considerably under \$1 million, there was some question in procurement officers' minds as to whether the company could handle the contract. Only by pointing to the over-all worth of the Engelhard group was it possible to allay the officials' fears.

This specific event again opened the question as to whether sales personnel from one unit might get entry into a new plant more easily if there was a recognition that the company was already doing business with a sister Engelhard enterprise.

Grouping So Far: At present, there is some consolidation of functions, especially in the foreign offices. Any first step in consolidation in the U.S. will probably come in the smaller sales offices; success here would encourage a broader consolidation and simplification of the structure.

All of this would seem to bode well for future growth of the Engelhard interests. In the past, its outlook has been essentially conservative; and as a result, it cannot point to, say, a 10-fold increase in net worth over the past 10 years.

But to balance this, it can report that its expansion has been financed out of earnings. The additional ability to set aside reserves for estate and inheritance taxes is something that many privately held corporations envy. Conservatism is a strong founda-

DESIGN and PRODUCTION NEWS

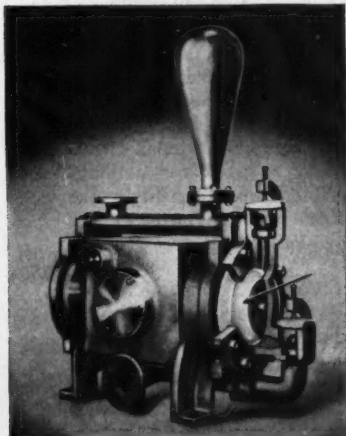
FOR CHEMICAL ENGINEERS

Published by TECHNICAL SERVICE, Chemical Manufacturing Division, The M. W. KELLOGG Company September 1953

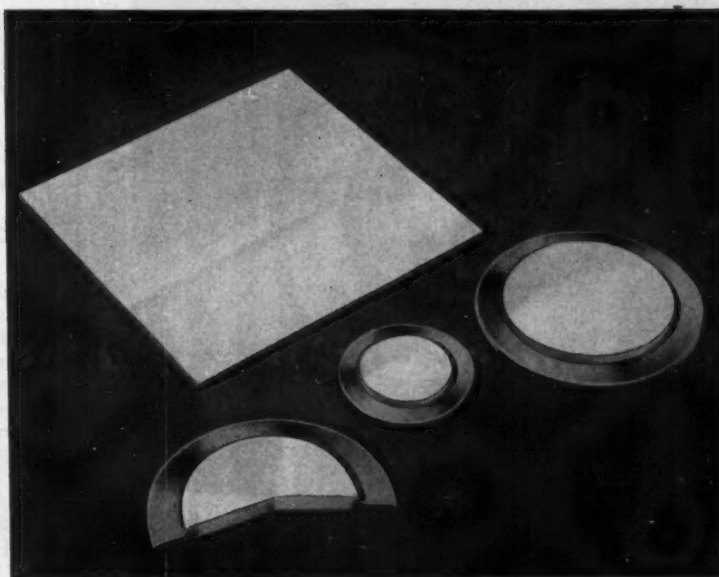
Rugged Diaphragm of Kel-F Pumps Abrasive, Corrosive Slurries at Uniform Rates... without Clogging

This widely-used positive-displacement pump now employs a diaphragm of plasticized Kel-F polymer, enabling it to handle corrosive and abrasive suspensions which previously made short work of rubber and other diaphragm materials. The reasons for specifying Kel-F polymer as the diaphragm material are many. The plastic's absolute chemical inertness allows the use of a single pump for many chemical pumping jobs. The high abrasion resistance and flexural strength of Kel-F permit the pump to work through countless flexing cycles in corrosive and abrasive mediums without erosion of the diaphragm. The plastic's remarkable "memory" prevents the diaphragm from permanently stretching out of shape thus maintaining constant pumping volume and capacity.

This special slurry pump is manufactured by T. Shriver and Company, pump specialists of Harrison, N. J. The company fabricates the diaphragm from sheets of plasticized Kel-F polymer supplied by the Reiss Manufacturing Company of New York, N. Y. Special thermal stabilization of the material, imparts unusual service life.



Refer to Report C-108



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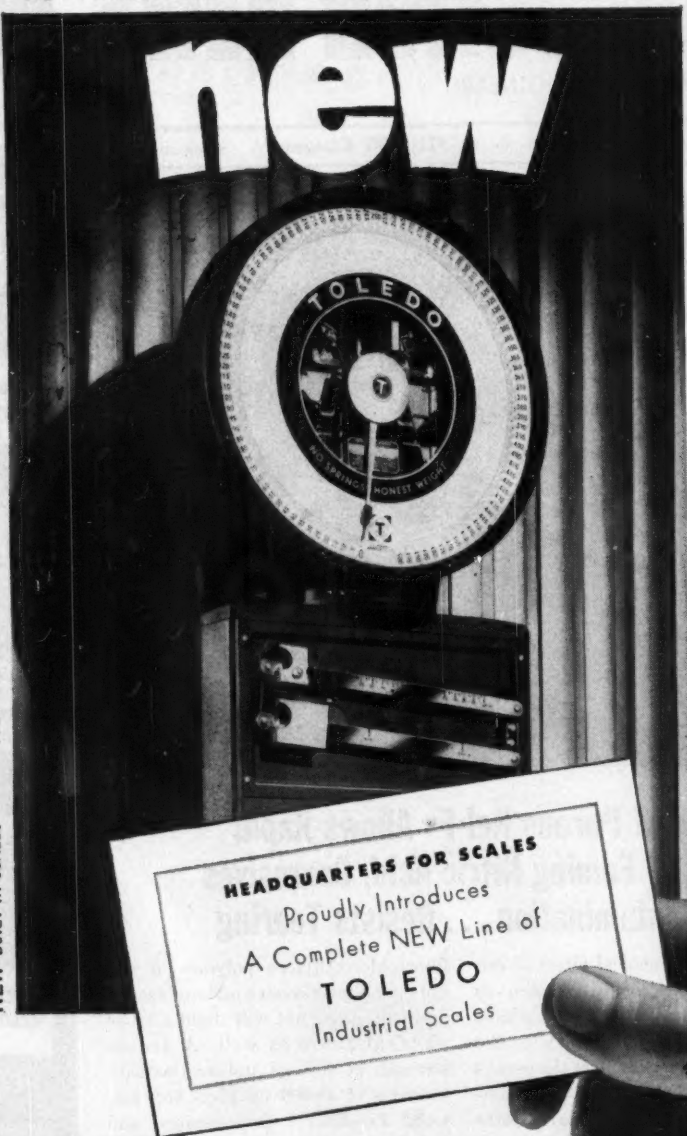
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B & I

tion for future building. As yet, the picture of the specific type of building is not clear.

For the structure that is the Engelhard empire, the future pattern will probably not be a rote copy of the Germanic design that worked so well for the elder Engelhard, but rather an organization combining the best features of this with some of the American-developed ideas for corporate management. Such a setup obviates the need for supervising each detail, allows concentration on decisions on which company growth depends.

Aqueous Dilemma

The need for process water has brought headaches to many chemical companies. Latest to be reaching for the aspirin bottle is American Cyanamid, which is involved in a squabble in Savannah, Ga.

Cyanamid, needing more water for titanium dioxide production, applied for city permission to dig artesian wells capable of supplying 6 million gal. of water daily, and got it.

This proposal has drawn fire not only from nearby community associations, but also from a neighboring industrial plant, Union Bag and Paper Corp., which itself had been mentioned in the community complaints. New wells, said the complainers, would unnecessarily lower the water table, might allow salt water seepage.

Union put two wells into production back in Aug. '36, but since then has voluntarily contracted to buy city water rather than drill more wells of its own. Cyanamid's plans, says Union, would "jeopardize" its existence. Cyanamid, for its part, has not yet decided whether to go ahead in the face of these objections.

LABOR

Make It 14: Legislators in Alabama have passed a bill outlawing the closed shop and other forms of "compulsory unionism," and prohibiting involuntary checkoff of union dues. The Alabama measure was patterned after the Virginia "right to work" law (identified in union circles as the "right to work for nothing" law) which has been upheld by the U.S. Supreme Court. Thirteen other states have similar laws.

Process Peace: Unions in another chemical process field may soon have a no-raiding agreement. The three major paper organizations—AFL International Brotherhood of Paper Makers, CIO Paper Workers of Amer-



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B & I

ica and AFL Pulp, Sulphite and Paper Mill Workers—are discussing the possibility of such a pact, under which the unions would agree not to take members away from each other, but to organize the unorganized.

• **Longer on Lucre:** Four contracts, bringing workers a minimum of five cents more per hour, were signed this week:

- 325 Monsanto employees at Trenton, Mich., organized by the CIO's United Chemical Workers, have a new two-year contract giving 8¢/hour increases now, 5¢ more in Aug. '54. Other provisions: escalator clause giving 1¢ adjustment for each 0.8-point change in cost-of-living index, 9¢ and 18¢ shift differentials.

- Workers at Du Pont's Belle, W. Va., facilities, will receive an additional 9¢/hour. The 3,000-odd workers at Belle received their last increase in February.

- Diamond Chemical (Brooklyn, N.Y.) and a United Chemical Workers local have signed agreement calling for a 5¢ hike, plus an additional 2½¢ next January.

- General Aniline & Film's Ozalid division employees at Johnson City, N.Y., have a new yearly agreement providing 5¢ more an hour. The new contract will not include an escalator clause as in this year's contract, but all gains under the old escalator will be frozen.

• **Alienated Affections:** The CIO Chemical Workers have taken over from the AFL Teamsters the right to represent the 270 workers at Chicago's Transparent Package Co.

• **Strikes and Shutdowns:** The Phelps Dodge refinery in El Paso was shut down this week by a strike of 700 members of the independent Mine, Mill and Smelter Workers. Break-off of negotiations came over the allegation that the company was offering different terms to workers in El Paso from those it offered to Arizona employees.

- Office employees at Jefferson Chemical's Fort Neches, Tex., plant have authorized a strike over disagreement on wage parity and job classifications. The workers are organized by the CIO Oil Workers, one of five unions in the plant. Negotiations are continuing.

• **No Stately Mansions:** Three areas reported construction stoppages this week:

- Virtually all large construction projects in the Sabine River-Orange-

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Cyanoacetamide

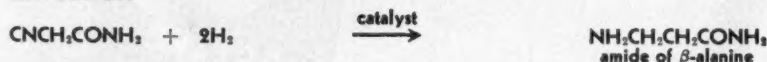
CYANOACETAMIDE (both a nitrile and an amide) is another Kay-Fries intermediate with a cyano-activated methylene group. It is now used in the syntheses of vitamins and barbiturates. Potentially its usefulness can be expanded. It has been suggested as an intermediate for special resins, substituted piperidines and pyridones, new pharmaceuticals and general organic synthesis.

KAY-FRIES SPECIFICATIONS . . .

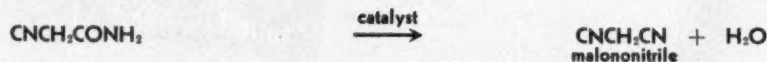
purity	● 99.0% min.
melting point	● 119.0°-122.0°C (meniscus to complete melt)
ash	● .05% max.
solubility	● 1 gm. completely soluble 9 gm. dist. H ₂ O

Typical reactions of CYANOACETAMIDE

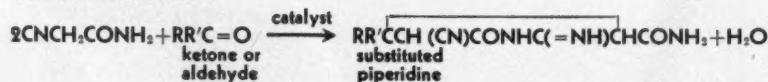
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B & I

Port Arthur, Tex., area were shut down by a strike of some 200 engineers who operate bulldozers, cranes and other heavy machinery.

• Construction workers at Reynolds Metals' Gum Springs, Ark., plant walked off the job following a dispute over whether construction workers or Reynolds' own employees should move office equipment to Gum Springs.

• The Paducah, Ky., atomic energy plant experienced its 83rd work stoppage in just over 30 months.

Newly Knotted: Latest instances of knotted relations between chemical labor and management range from New Jersey to Colorado.

• Some 235 chemical-recovery coke ovens were cold this week with 800 members of Gas-Coke Local 92 out on strike following a breakdown in negotiations with Koppers Co. at Kearny, N.J. The union says it wants a 12¢ increase and a pension plan; a company spokesman said a 5¢ rise and 15 other benefits had been offered.

• Construction of a \$2.5-million monosodium glutamate plant at Johnstown, Colo., has precipitated an AFL jurisdictional dispute and a district court suit. Great Western Sugar Co. is building the plant, with Federal Labor Union members swinging the hammers. That union has refused to give way to the Building Trades Council, so the AFL is suing the Federal Labor Union to make it surrender its AFL charter.

KEY CHANGES . . .

Cecil P. Young, to president, Permachem Corp., New York.

Robert C. Gunness, to director, Indiana Standard Oil, Chicago.

Charles M. Hickey, to manager of manufacturing, J. C. Crowder, to general superintendent, Consolidated Chemical Industries' southern division, Houston.

J. J. Lawler, to sales manager, Shell Chemical's Julius Hyman Div., Denver, Colo.

Robert E. Lenz, to assistant to chief engineer, Monsanto's organic chemicals division, St. Louis.

Donald V. Sarbach, to technical manager, new products development, B. F. Goodrich, Akron, O.

DIED

Alfred H. White, 80, founder, University of Michigan chemical engineering department.



Chemical expansion soars high and fast these days. And it will be a case of "ceiling unlimited" for some time to come.

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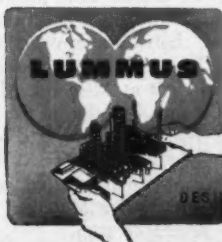
Many of the world's most-needed products are made in these plants: ethylene, styrene, butadiene, carbon black, phenol, resins, solvents, asphalts, alcohol, acetone, toluol, ammonium picrate, catalysts. What's more, you're likely to come face to face with a Lummus unit anywhere—for our service is world-wide.

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RESEARCH

Making Pollution Pay

Stream pollution may be a pain in the neck to most industrial firms, but it's a meal ticket for Reliance Chemicals Corp. of Houston, Tex. The enterprising Gulf Coast company has a going business in the manufacture of microbiological cultures for municipal sewage units, is now trying to crack the industrial field with a new series of custom cultures for treating plant wastes.

Thus far, Reliance's custom Bionetic cultures have not found employment in any plant-scale industrial waste treating operations. But they're still in the investigative phase of development, are being explored by a score of companies and industrial groups.

National Canners Assn., for example, is doing research at Poynette, Wis., on the treatment of cannery wastes with microorganisms. The work, reports Reliance technical director A. J. Krell, is incomplete. But, he points out, "it indicates the practical low-capital-cost approach of effectively treating cannery wastes with existing facilities.

"In the dairy field, the use of our cultures with the present aeration method shows substantial value. . . . We have several contracts under consideration by various companies that will undertake broader application of the use of specific . . . custom cultures for the treatment of their industrial wastes. More documentation is necessary in each of the fields in which we are working. Semi-plant and plant studies will shortly provide this data."

Backbone of the company's bid for the industrial market is a series of specially bred microorganisms that are being primed for these potential jobs:

- Decompose oil in refinery wastes.
- Break down phenols, aldehydes, cyclic compounds.
- Accelerate oxidation of paper mill waste.
- Accelerate oxidation of dairy waste.
- Treat cannery, textile mill, and citrus processing wastes in lagoons.
- Treat sugar mill wastes.

Diversity of this list underscores a fact of life for Reliance researchers. Simply, it comes down to this: for every chemical waste-treating problem, there exists a microorganism that can provide a solution. The trick, of course, is to find the right microorganism. Krell emphasizes the importance of a continuing program of research to screen bacteria and fungi, single out those that produce the enzymes to handle a particular task.

Summing up this approach, he states: "No microorganism can attack a compound of any type without having some enzyme system to do so. In our case, we have taken organisms from nature that have developed adjusted enzyme systems so that they more effectively attack specific compounds."

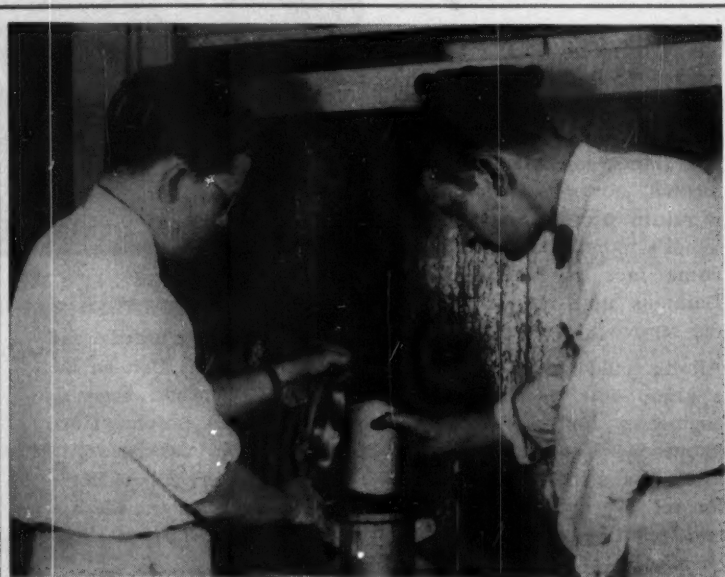
But Reliance microbiologists shy away from pure cultures, try, whenever possible, for synergistic combinations. Several of Reliance's cultures utilize fungal stimulators, which exert a synergistic action on their bacterial mates.

Sludge Cutter: Appeal of the microbiological methods of waste treatment isn't hard to see. In some cases, there isn't any other known way of dealing with certain wastes. Then, biological methods create no voluminous sludge, give rise to fewer by-products than comparable chemical techniques. And once the biological process is delivering a satisfactory effluent, the amount of culture needed to keep it going may be sharply reduced.

Key to Reliance's ambitious plans, in the company's words, is "a means of manufacture that can reproduce organisms in such quantity that they can influence a . . . process." The firm has an exclusive license for the manufacturing process in the field of waste treatment, exercises it for the manufacture of cultures containing from 3 to 10 billion organisms per gram of finished product. Sold as dry solids, the cultures keep their potency for up to 18 months.

Reliance's sewage cultures have proved out in the year since they were introduced; cultures for industrial waste treatment presumably wouldn't pose drastic new problems.

Biological treatment of plant wastes is, in itself, hardly a revolutionary idea. Dow Chemical Co., for example, has been doing it at Midland, Mich., for several years. But this is the first time waste-treating cultures are being offered to all industrial comers. For a firm that has made municipal pollution pay, however, it's a logical and potentially profitable step.



Easy Does It

STRONG POINT of new cyanoethylation process (CW, Sept. 5) for modifying cotton fiber is graphically demonstrated by the Institute of Textile Technology (Charlottesville, Va.) researchers who played a part in developing the technique. The ITT staffers are removing a package of yarn from

the simple cyanoethylation apparatus. The new process uses acrylonitrile to produce a new series of upgraded cotton fibers (tagged T-7), is the first to achieve chemical modification of cotton in conventional yarn package-treating equipment. With this equipment, both yarn and fiber are processed.

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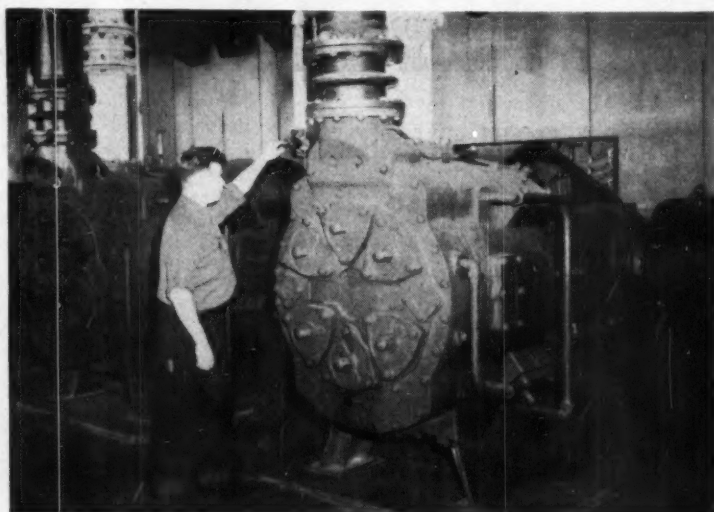
It will pay you to investigate Du Pont methylamines if you manufacture dyes, drugs, quaternary ammonium compounds, rubber chemicals, fungicides, herbicides . . . any product where the amine group is needed. For specific information, including price data and shipping points, simply write: E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Wilmington 98, Delaware.



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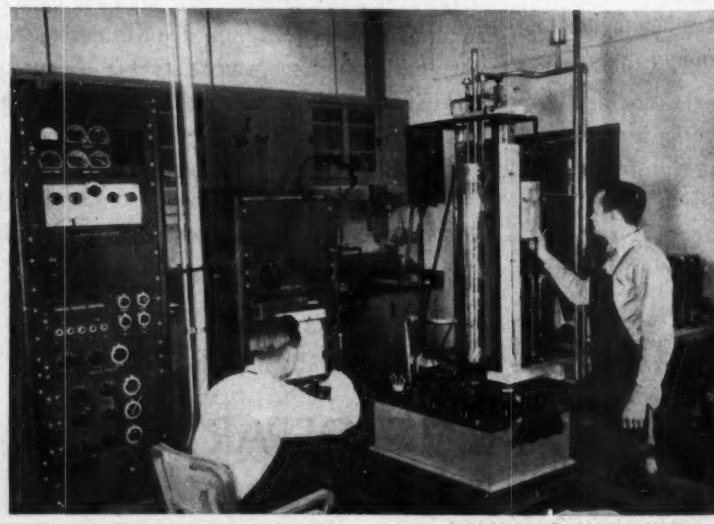
September 12, 1953 • Chemical Week



Cryogenic Proving Ground

YOU WOULD NEVER know it, but the dungareed operator (*above*) tending the vacuum pumps and the black-aproned researchers (*below*) are part of one integrated operation. They are three of the 60 scientists and plant workers who staff the new \$3.5-million NBS-AEC Cryogenic Engineering Laboratory at Boulder, Colo. The liquefied gases produced in the plant (*above*) are being used in the laboratory (*below*) to determine the heat conducting properties of metals and plastics at low temperatures. It's all part of a NBS program focused on the development and evaluation of materials and equipment slated for

use at temperatures bordering on absolute zero. Behavior of matter at these super-frigid temperatures is erratic, can't be predicted by ordinary physical calculations. Located on a 210-acre tract, the new installation—consisting of a liquid hydrogen plant, a liquid nitrogen plant, and a group of research laboratories—makes possible large-scale production of liquefied gases that have not previously been available in sufficient quantities for governmental and industrial research needs. Interesting feature: hydrogen liquefying and purifying equipment is in duplicate so the plant can be operated continuously without shutdown.



Chicago Headliners

Four new developments of potential value to industry were among the highlights of this week's sessions of the American Chemical Society's Chicago national meeting:

- Antibiotic ice, containing one part Aureomycin to one million parts of ice, was unveiled as a new means of lengthening the storage life of fish. Developed by researchers of Pacific Fisheries Experimental Station (Vancouver, B.C.), the chilly mixture is used in place of ordinary ice, combines the antibacterial activity of the antibiotic with the conventional preserving effect of cold.

Of 15 antibiotics investigated, only Aureomycin and terramycin were found by the Canadian scientists to be effective in the preservation of flesh foods; Aureomycin had the edge, showed marked antibacterial activity at extremely low concentrations. Oddly enough, the effect is reported to be noticeable only from freezing temperature to about 20 C.

Pacific Fisheries researchers are not limiting their preservation studies to the antibiotic-in-ice. They have also explored two other possibilities: dipping fish into antibiotic solutions prior to icing them; and storing fish in cold antibiotic-laced sea water. Still being sought: a sensitive method for determining the Aureomycin content of treated fish flesh.

- New light was shed on the mechanism of antibiotic-induced animal growth acceleration. According to Lorraine Gall of National Dairy Research Laboratories (Oakdale, N.Y.) and Louis Rusoff of Louisiana State University, the evidence points to faster bone growth. Current popular theories explain the growth-boosting effect on the basis of beneficial alterations of intestinal microflora. But researchers Gall and Rusoff found no evidence in support of this approach, did, however, find that antibiotic-fed animals had larger skeletons than their antibiotic-deprived kin. At best, the pair's findings have limited value. Their results were obtained with calves, cannot be extended to poultry and swine, which form the bulk of the market for antibiotic feed supplements. But their observations could help blaze the trail to a better understanding of ruminant nutrition.

- Ordinary soap was stripped of its germicidal pretensions by chemists Ferlin and Karabinos of Blockson Chemical Co. (Joliet, Ill.). Free fatty acids, they venture, are responsible for any germ-killing power that soap may possess. Moreover, reports the pair, the germicidal activity of some



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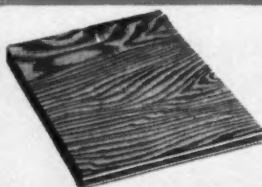
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Name

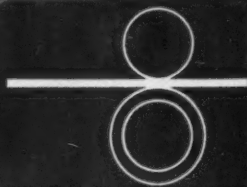
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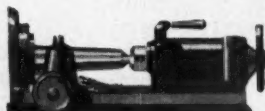


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RESEARCH

fatty acids is comparable with that of quaternary ammonium compounds. A low pH, however, is essential for the germ-killing effect.

Potential applications of the Blockson duo's discovery are not hard to envision. Starter: acid cleaning operations might be made lethal to several bacteria (including *staphylococcus aureus*) by the addition of fatty acids in the C₉ to C₁₂ range. (Undecylic, C₁₁, proved the most bactericidal.) Added possibility: the new findings could pay off in the development of a microbiological method for the assay of minute quantities of the germicidal fatty acids.

• Progress in the search for synthetic hormone substances was reported by Kansas University researchers Burckhalter, Jackson and Sam.

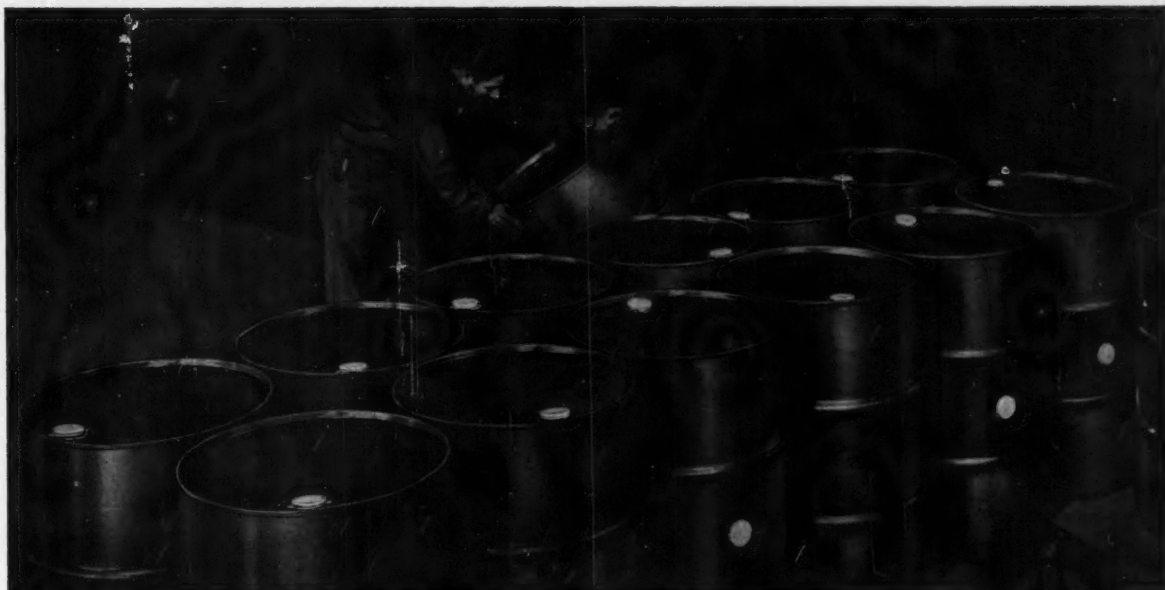
In search of a cortisone substitute, the team instead came upon a compound with female sex hormone activity. It is 4-(3-carboxyphenyl)-3-(4-hydroxyphenyl)-2-hexanone, bears a superficial configurational resemblance to the cortical hormone. Although the compound is hardly a steroid, it contains structural and spatial properties that evoke a physiological response akin to that caused by steroids.

Despite the setback in the quest for a cortisone substitute, the Kansas University trio is undaunted. "We feel," Burckhalter explains, "that our molecules must be made up to resemble more closely the natural steroid before the disguise will be complete enough for the body to let it pass for cortisone. We are continuing our camouflaging experiments . . . the body has been tricked before."

• **Keeping Tabs:** Translated abstracts of applications filed with the German patent office are now available from Research Information Service (New York). Under terms of the new service, chemical patents are broken down into three broad categories on the basis of structure of compounds described.

• **Collection Aid:** A new line of glass metabolism cages for use in studies of the metabolism of carbon-14 labeled compounds is the offering of Wakefield Industries, Inc. (Skokie, Ill.). Purpose of the specially designed cages: to aid the collection of urine and expired air from laboratory animals that have been injected with tracer materials. Two sizes are available: large, for rats; small, for mice.

• **X-ray Time:** North American Philips Co., Inc. (Mount Vernon, N.Y.) is now registering candidates for the fall session of the company's semi-



Tri-Sure equipped drums of Interchemical Finishes at the Newark, N. J. plant

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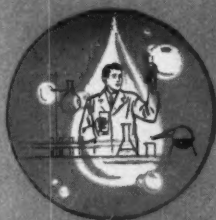
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STEPAN CHEMICAL COMPANY

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Both the primary Stepan Makanols and their sulfates are available in commercial quantities based on semi-works unit production.

TENTATIVE SPECIFICATIONS

	% Myristyl Alcohol	% Cetyl Alcohol	% Stearyl Alcohol	% Oleyl Alcohol	% Linoleyl Alcohol	Iodine No.	Saponifi- cation Value	Titer
MAKANOL I	6	27	15	50	2	55	2	42
MAKANOL II	6	27	67	4	2	52

SUGGESTED USES

Emollients
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Oil Additives
Chemical Intermediates
Esters
Plasticizers
Mold Release Agents
Rust Preventatives
Textile Sizings

Leather Stuffing
Resins
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Wax Compounding
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Lubricants
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RESEARCH

annual X-ray diffraction school. The sessions will run during the week of Oct. 5 at North American Philips' Mount Vernon plant. On the curriculum: low-temperature camera techniques; fluorescence analysis; Geiger counter X-ray spectrometer; electron microscopy and diffraction.

Renewal: Thirteen graduate fellowships in the physical sciences is Sinclair Refining Co.'s contribution to industrial-aid-to-education for the upcoming academic year. All 13 fellowships are renewals. Novel feature of the Sinclair program: a fellowship in organic chemistry for a female degree candidate (at Mount Holyoke College).

Easy to Spread: Aceto-oleins and highly hydrogenated cottonseed or peanut oil are the principal constituents of a new Dept. of Agriculture-developed margarine-like product. According to the USDA, the product "is spreadable at temperatures well below zero and well above 100 F . . . keeps better than margarine or butter. . . ." If the new spread comes through edibility tests, it probably will be earmarked for army use.

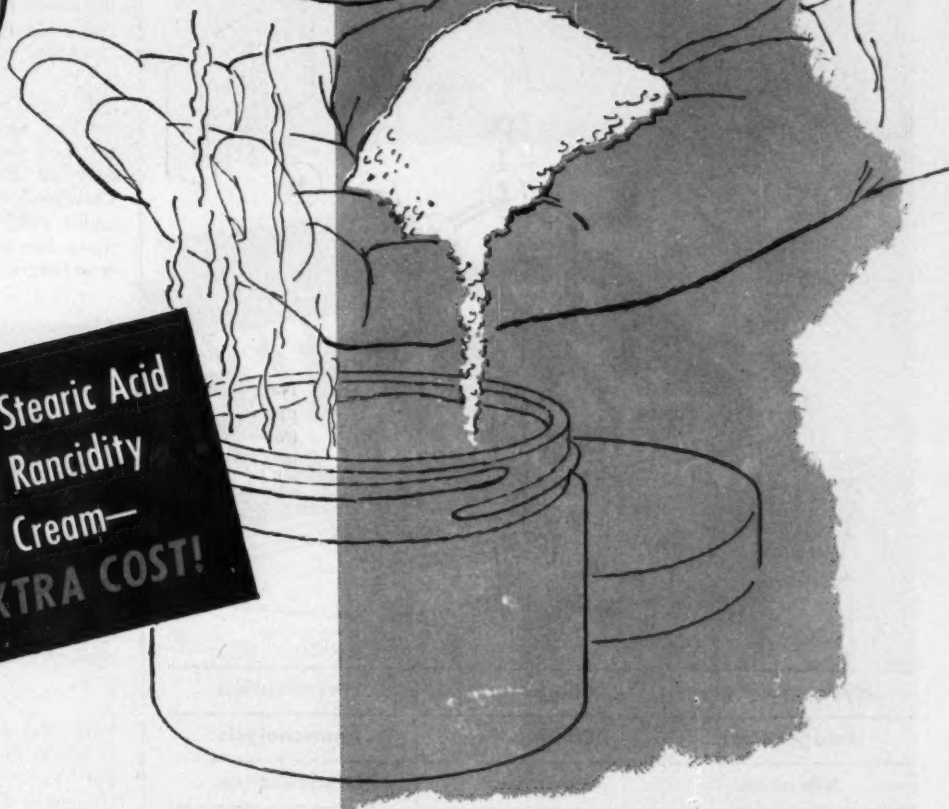
Aluminum Progress: Headway toward the goal of a domestic source of aluminum is seen by Bureau of Mines in the results of its operation of an experimental alumina plant at Laramie, Wyo. Here's how the bureau's process works: clay is heated with lime and soda in such a way that the lime holds back most of the silica while the aluminum dissolves with the soda; treatment with more lime, then carbon dioxide, removes more silica until the residue approaches a satisfactory quality aluminum ore. The Laramie plant gets around the problem of handling thick silica solutions by adding molasses, which delays formation of silica gel. It's only a stop-gap measure; other methods are now under investigation.

Artery Aid: Researchers of Wayne University medical school are making headway on a new approach to the treatment of hardening of the arteries. In experiments with laboratory animals, Wayne scientists have underscored the potential value of ethylenediamine tetra-acetic acid in therapy. The familiar chelating agent apparently is able to reduce deposits of fat and minerals that plug the blood vessels of those suffering from the disease. So far, only one human has received the compound, but research is continuing.

CASE HISTORY

Another tough problem solved by an Emery Product

How Emersol® Stearic Acid
Eliminated Rancidity
in Hand Cream—
AT NO EXTRA COST!



To have rancidity in cosmetics is unthinkable. That's why this manufacturer of hand cream changed from an ordinary triple-pressed stearic acid to Emersol 132 Lily Stearic Acid...to obtain maximum oxidation stability. Not only was his product fresher and sweeter from the first, but it stayed that way longer.

Because Emersol 132 costs no more than competitive triple-pressed grades, this increased shelf life, this extra sales appeal cost him nothing.

Whatever you make, cosmetics or entirely unrelated products, the resistance to rancidity of all Emersol Stearic Acids carries over to your finished product. This, coupled with the outstanding color stability and oxidation resistance inherent in Emersol Stearic Acids, will make your product better, stay better longer, and...easier to sell. Since they cost no more than ordinary grades, next time...everytime...it will pay you to buy Emersol Stearic Acids!

Write to Dept. D-9 for the
complete story on Emersol Stearic Acids



Fatty Acids & Derivatives
Plastolein Plasticizers
Twitchell Oils, Emulsifiers

Emery Industries, Inc., Carow Tower, Cincinnati 2, Ohio
Exports 5035 RCA Bldg., New York 20, New York
New York • Philadelphia • Lowell, Mass. • Chicago • San Francisco
Schibley & Ossmann, Inc., Cleveland • Ecclestone Chemical Co., Detroit
Warehouse stocks also in St. Louis, Buffalo, Baltimore and Los Angeles

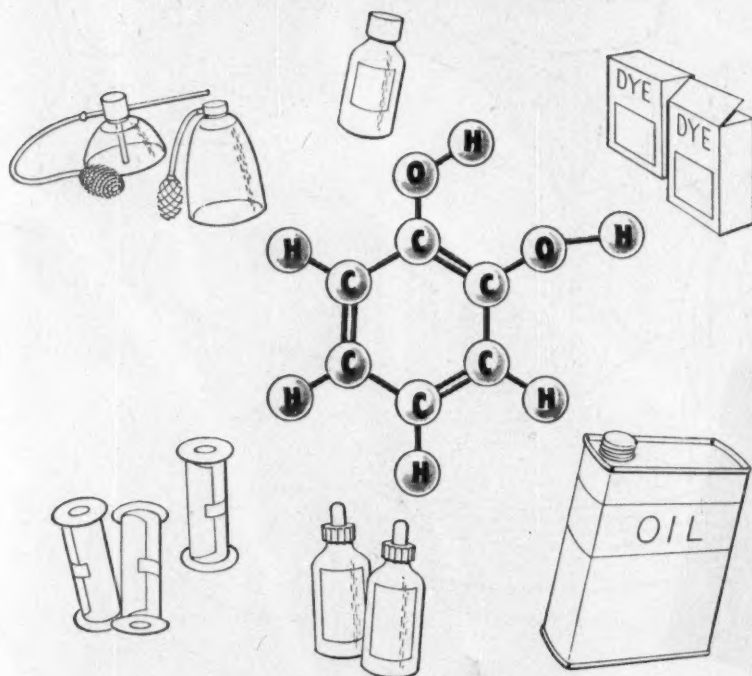
What Does Emersol Mean?

Emersol, a contraction of the words "Emery" and "Solvent", describes Emery's exclusive process of solvent separation of fatty acids. Of more significance, however, is its meaning in terms of product performance. Because of this unique process, the use of automatic controls and of corrosion-resistant metals throughout, Emersol Stearic and Oleic Acids are purer, more uniform, of "controlled" composition, and freer from metal contamination and other impurities that promote oxidation, rancidity and yellowing.

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For a host of chemical reactions . . .



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Halogenation	Oxidation	Ammonolysis
Nitration	Acylation	Condensation
Sulfonation	Esterification	Coupling

KOPPERS Catechol (ortho-dihydroxybenzene) is a water-soluble, crystalline, dihydric phenol, with chemical reactions typical of phenols.

Catechol is used in the preparation of dyestuffs and medicinals, in bactericides, antioxidants, perfumes, photography applications, and electroplating.

Koppers Catechol may be obtained in two commercial grades:

Catechol C. P.—with a minimum purity of 99.0%, in the form of crystalline granules.

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The ready availability of this organic chemical presents to the research chemist an interesting and profitable field for laboratory experimentation. Write for further details on the properties, reactions, and uses of Catechol.

KOPPERS COMPANY, INC.
Chemical Division, Dept. CW-9123
Pittsburgh 19, Pennsylvania



Koppers Chemicals

RESEARCH

Food Build-Up: Armour Research Foundation (of Illinois Institute of Technology) is ready with its expanded food technology research services. Available to industry, the expansion is the product of two years' preparation by the foundation's biochemistry section.

See for Yourself: Newest literature services and reference material of Special Libraries Assn. will be on display at National Metal Congress, Cleveland, Oct. 21-23. An SLA specialist will be on hand to demonstrate up-to-date services, instruct metals researchers on specific literature sources.

Thermocouple News: In a bid for uniformity in thermocouple calculations, National Bureau of Standards has prepared new reference tables for iron-constantin thermocouples. The new tables, says NBS, correspond more closely to the properties of commercially available thermocouples than do any of the other iron-constantin reference tables currently in use. The work should make for greater accuracy in determining temperatures from observed thermocouple voltages, aid in the preparation of improved purchase specifications for thermocouple wire.

Four-Way Boost: Construction is due to begin this fall on an addition to the research laboratories of E. F. Houghton & Co. (Philadelphia). For its new facilities, Houghton has mapped a new research program in four broad fields: machine tool cutting fluids; surface treatment of metals; heat treatment of steel and nonferrous metals; textile oils and fiber processing agents.

Clearing the Way: At the request of Buffalo's (N.Y.) Dept. of Public Works, the city's Common Council is considering a motion to suspend a building code ordinance to permit the construction of National Aniline Div.'s (Allied Chemical & Dye Corp.) proposed \$2.8-million research center. Need for the suspension: National Aniline's blueprints call for a three-story structure, 19,546 sq. ft. per floor; Buffalo's building code limits the area of each floor of such a building to 13,500 sq. ft. According to local observers, chances for a favorable ruling are good.

Atomic Parley: National Industrial Conference Board's second annual Atomic Energy in Industry parley is slated for New York, Oct. 29-30.

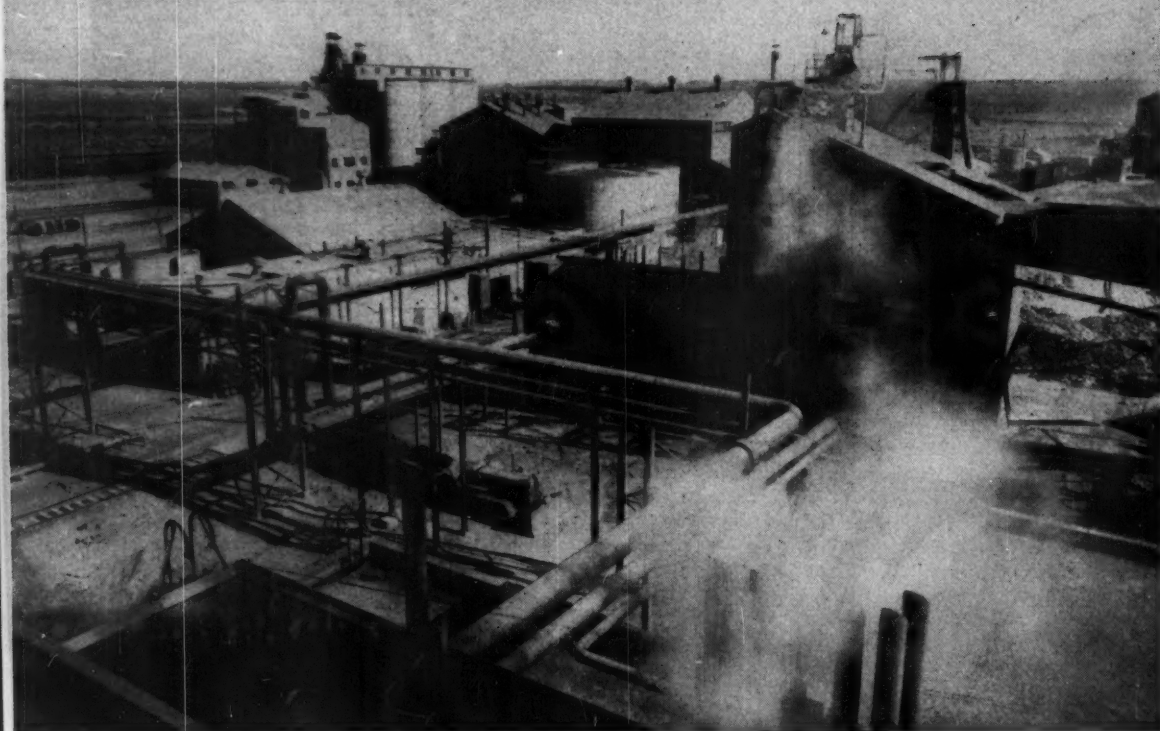


Resins

P 48

THE NEVILLE COMPANY • PITTSBURGH 25, PA.

Plants at Neville Island, Pa., and Anaheim, Cal.



THIS IS WHERE Westvaco processes its trona. But making soda ash from trona calls for a know-how . . .

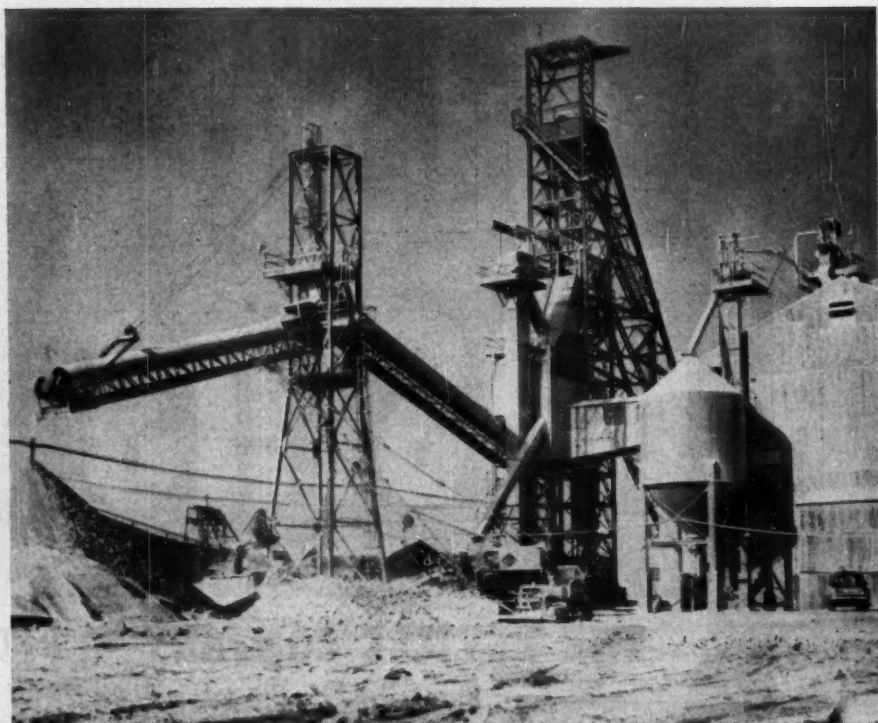
Marriage of Coal and Chemicals

IT WAS a sweltering summer day on the wastelands of Wyoming, just 18 miles west of Green River. Making chemical history was about the last thought in the minds of the drilling crew on Hay #1. They were looking for oil.

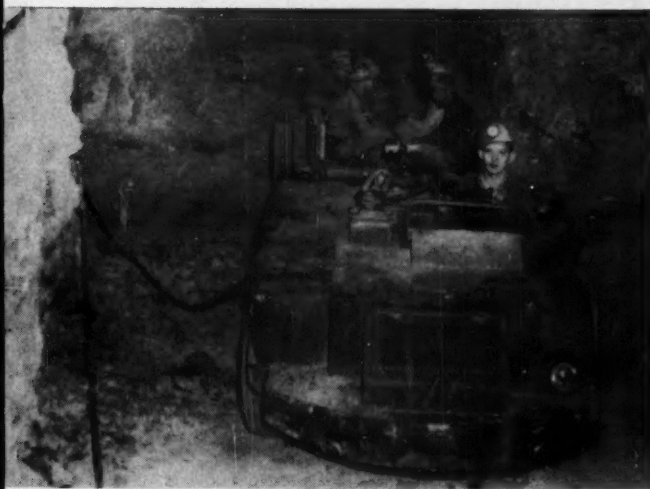
Between 1,180 and 1,820 ft., they struck a deposit of unusual crystals. Although small attention was paid to it at the time, the finding was dutifully logged. Finally, at 3,190 ft., the casing was pulled; the hole was a "duster"; they hadn't found enough oil to lubricate a ball-point pen.

But this, according to Westvaco Chemical, was to be "the most productive dry hole ever drilled." For the unusual crystals turned out to be trona, part of a vast uncharted deposit averaging between 5 and 10 ft. thick and covering an area of almost 30 square miles. Reserves have now been proved at 270 million tons of trona, enough raw material for 170 million tons of soda ash. There's a good chance that unproved reserves may be even bigger.

At Half the Price: Westvaco this week is posting the final chapter of what it refers to as the "Wyoming Story" that started on Hay #1. It's a story that covers a span of 15 years



AND THIS IS WHERE the marriage is consummated, where skip hoists raise trona to the surface at the rate of seven tons a minute.



MEN ARE CARRIED into the mine on a jeep. Low ceiling makes the trip a real "joy ride" for the miners.



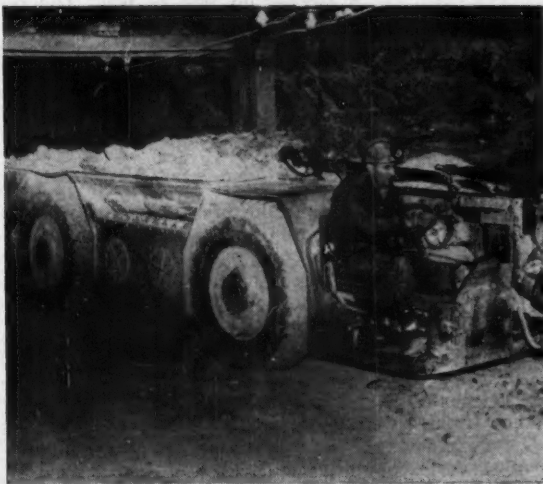
UNDERCUTTER MAKES a 4-in. groove, about 9 ft. deep, preparatory to blasting a new face.



SHOT-HOLES ARE DRILLED across the face of the tunnel, then loaded with explosive, and the trona is blasted.



STEEL CLAWS of the mechanical loader rake the trona onto a short conveyor.



MEANWHILE, an electrically powered shuttle car backs up to the loader, picks up a 10-ton batch, which it places . . .



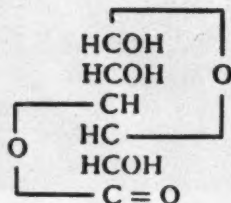
ON A BELT conveyor. Trona is then moved to the main conveyor, is crushed and sent to the skip hoists.

Research

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PRODUCTION

and the expenditure of \$18 million. It's a story of the part played by luck in getting the trona from its bed, 1,500 ft. in the earth, to the surface, then converting it to salable soda ash. It's a story of the marriage of coal mining and chemical processing techniques, of engineering accomplishments.

A case in point is the plant on the site operated by Westvaco for the Intermountain Chemical Co., owner of the mine and plant. Although the first hopper car of soda ash left the plant several months ago, the plant has not yet hit its rated stride of 1,000 tons per day. But even in the most stereotyped plants, a certain amount of trouble during the shake-down period is expected. And the Green River plant is the first of its kind, the first departure from conventional soda ash plants, by a big alkali producer in 41 years. The major wrinkles, however, are fast smoothing out and the plant is gradually climbing toward its designed capacity.

And though the plant represents an investment of \$18 million (including \$2 million for original mine development work and extensive pilot planting), Westvaco feels the prize is more than worth the effort. This is how it reasons: Over 90% of the existing soda ash production is accounted for by the ammonia-soda process, a simple one that requires only cheap abundant raw materials. But at present costs, an ammonia-soda plant costs about \$30,000 per ton-day of output. Thus, for an ammonia-soda plant comparable with its trona facility, Westvaco would have to spend \$30 million instead of \$18 million. Additional capacity at Green River, moreover, will call for an even smaller investment.

In the Hole: Production at Green River is divided into two parts—mining and processing. The first part, as shown by the pictures on the accompanying pages, is more typical of a coal mining operation than of a chemical plant. It's not too far afield for Westvaco, however, whose experience includes extensive mining operations on the West Coast.

Processing on the surface starts with dissolving the soda ash in boiling water (200 F at the 6,200 ft. elevation), then feeding it to a Dorr clarifier. Next, it's sent through a thickener where the 5% shale that makes up the bulk of the impurities is separated out. Overflow from the clarifier passes through a surge tank, is filtered to get rid of the organic and other impurities that would cause foaming in the crystallizers. After the

filtration, the liquor is sent to an evaporator where it's concentrated to 20-30% solids. It's then moved to a settling tank, then centrifuged and finally calcined. The only chemical change in the whole operation occurs in the calciner where the refined trona is converted to soda ash.

In the mine, there's very little change in temperature the year around. But Wyoming winters are famous for their severity, and moving the material above ground poses a problem. To make matters worse, efficiency calls for saturated solutions at high temperatures, and a two-degree drop in temperature could freeze the solutions. All the lines, therefore, are steam-traced and are capable of operating under external temperatures as low as -40 F.

Looking West: Because of the low profit-margin on ammonia-soda plants, there hasn't been a major one built from the ground up in over 17 years; increased demand has been met through additions to existing plants. As Westvaco sees it, this has caused a situation in which only 6% of all the soda ash production is carried on west of the Mississippi and north of the Gulf Coast. Yet, it figures that 30% of the ash is consumed within economic shipping distance of the Wyoming plant. With well-placed confidence in the continued growth of Western industry, it can see nothing but a happy ending for its "Wyoming Story."

EQUIPMENT

Better than Ever: Its wheeled fire extinguishers are now 50% more effective says Ansul Chemical Co. (Marinette, Wis.) thanks to an improved design of the nozzle and gas tube as well as a stepped-up rate of flow. The restyled extinguishers in which the new features have been incorporated will be marketed as "B" models, will replace the "A" models. They're available in capacities of either 150 or 300 lbs.

New Supplier: Come Oct. 15, the process industry will have a new source of supply for copper tube when Triangle Conduit and Cable Co. (New Brunswick, N.J.) starts production in its new mill. Triangle, which manufactures electrical wire, cable and conduit, says the new line is part of its diversification program. It will turn out copper water tube, Types K, L and M, in standard sizes ranging from 1/4 in. to 4 in., sold exclusively through distributors.

Foamy Filler: Packer Machinery Corp.

NEW

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FOR THE PLASTICS INDUSTRY

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This money-saving idea is based on *Admex 710*, ADM's new multi-purpose, epoxy type vinyl plasticizer which will replace several specialized plasticizers, yet improve the quality of your products. *Admex 710* offers a unique combination of the ten basic qualities sought by vinyl processors.

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600 Roanoke Building, Minneapolis 2, Minnesota

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☐ Please send me *Admex 710* Evaluation Sample

Name

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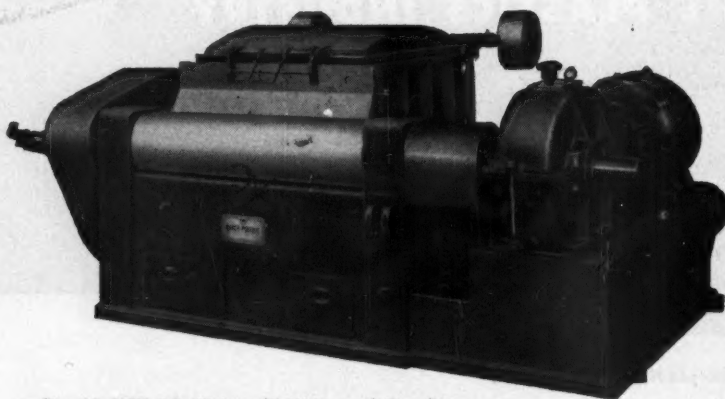
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BAKER PERKINS mixers

will thoroughly mix and knead almost any material for the chemical processing industry

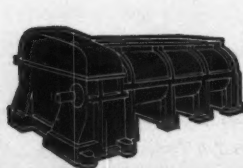
There is a BAKER PERKINS Mixer built to efficiently mix and knead materials ranging in consistency from dry powders and light fluids to stiff plastic masses. Close clearance between the blades and trough keeps every particle of the material in constant motion so that no part of the batch escapes the thorough mixing action of the blades. Intensive kneading is maintained as the material is pulled and squeezed against the blades, saddle and sidewalls. Consult a B-P sales engineer for full facts.



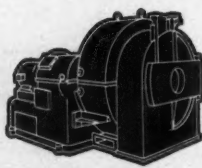
Size 16, NEM B-P "Universal" Mixing and Kneading Machine for heavy plastic masses. Working capacity 150 gallons; total capacity 225 gallons. Fabricated steel trough shell jacketed for 150 psi. steam or water pressure. Cast iron trough ends are not jacketed. Saddle section has thermocouple for temperature control. Cast steel Sigma or Double Naben blades cored for circulating steam or water. Oil tight gear guards; anti-friction bearings. 50 HP motor.

242-A

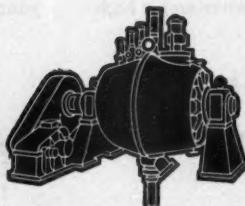
Other BAKER PERKINS products



EQUIPMENT FOR FOUNDRY INDUSTRY



CENTRIFUGALS



EQUIPMENT FOR RAYON PRODUCTION

BAKER PERKINS INC.

CHEMICAL MACHINERY DIVISION • SAGINAW, MICHIGAN

PRODUCTION

(New York City) has brought out a gravity filler that can handle as many as eight 1-gal. or four 5-gal. containers at a time. Filling from the bottom up, it's aimed for handling liquid soap, waxes, detergents and similar free-flowing materials that have a tendency to foam.

Corrosion Conference: Plant men who worry about the effects of corrosion on equipment will find solace in numbers at the 3rd Annual Conference of Corrosion Engineers, Western Region, at the Biltmore hotel in Los Angeles Nov. 19-20. Principal topics for discussion will be corrosion problems on pipelines, refineries and aircraft.

Labor Saver: Vandersee Engineering Co., Inc. (Los Angeles) has brought out a metalizing machine incorporating new design features. Principal improvement is the nozzle, says Vandersee, which eliminates the need for manual adjustments by the operator, also assures an even flow of material.



Betting on Beryl

FLASHING the million-dollar smile in the picture above is Howard J. Hewitt of Paterson, N.J. The reason for the smile is the ore sample he's holding in his hand. The ore's currently being tested by the Beryllium Corp. (Reading, Pa.) to determine how much beryl, raw material for beryllium, it contains. Hewitt is getting the ore from his mica mine in New Milford (Conn.), figures that if the ore proves rich in beryl, his worries are over.



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1703-A

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sodium methylate • sodium chlorite • hypochlorite products • dry ice and carbonic gas • ammonium sulphate • ethylene glycols and oxide • methanol



RESPONSE: To growing output challenge, producers can it.

"Permanent" Changes

When the cold weather petered out last spring, bringing chills to the hearts of the antifreeze makers, some dire predictions of rough, unsettling competition ahead for this fall split the ranks of ethylene glycol producers. To learn how conditions are actually shaping up, CW just completed a check with "permanent type" sellers. Here is the updated situation—the latest trends in distribution tactics in this \$175-million market.

This week, while large sections of the country were gripped by heat waves and much of the general conversation centered on temperature and humidity, one group of chemical suppliers was concentrating on what they'd do when winter comes.

Right now trade is reported to be back on even keel; tempers likewise have quieted down from the hot outburst of last February. But whether today's peace is the calm after the storm or before the storm is still a moot point. With last spring's experience fresh before them, it's a sure bet that glycol suppliers are keeping at least two thoughts uppermost in their minds. They know that:

- There's at least as much ethylene glycol to dispose of this year as in the 1952-53 season.

- A repetition of last winter's "miserably" mild weather would wreak sure havoc to the antifreeze business.

Painful Past: The whole difficulty

came to light last January, when oversupply became clearly apparent. What set off the competitive fire works right after the turn of the year was a routine enough matter.

Normally, the big ethylene glycol makers strive to even out their output in equal monthly steps. It's just more efficient to manufacture that way. Shutdowns and intermittent runs are avoided if at all possible.

In January, National Carbon Co. (Union Carbide's subsidiary for distributing Prestone, among other things) discovered that for the first time in its last 11 years of dealer inventory checking, it would need to give its dealers some added inducement to stock up beyond their usual needs; the simple alternative would have been to slow down glycol production.

The overstocked condition had been compounded from two factors:

- Recalling the lean ethylene glycol supplies of previous years, dealers had been readily persuaded to stock up as never before. And in the Southwest and Southeast—regions where antifreeze had always been hard to find—dealers laid in especially heavily.

- Old Man Winter fooled them. It wasn't just that the season was unusually mild. There were frigid spells in the weather; mostly, though, they were in areas where the car radiators

were not—out on the prairies, in the backwoods, everywhere but in concentrated auto areas.

So, "born of necessity"—to quote rival Du Pont—National Carbon offered its dealers one free can of Prestone with every 23 purchased. Most of the other big distributors, such as Commercial Solvents and U.S. Industrial, followed suit with similar or their own bonus versions designed to encourage dealers to increase their inventories. Du Pont, however, held out, claims it made no "deals."

Less Clogged: Today, whether through having used special incentives, or perhaps in spite of them, antifreeze makers are finding their distribution pipelines less clogged. As of the moment, a CW check uncovered no immediate plans to reinstate price cutting to the dealers. Most of the "deals" expired on or before July 31.

Concerning the future, however, the Du Pont and National Carbon camps are still as far apart as ever. Du Pont foresees a 'resumption of price cutting and special offers. A Du Pont spokesman reasons this way: Assuming that last year's oversupply condition of glycol would be repeated, independent dealers, unable to sell on the basis of prestige and service, could be expected to again resort to lower prices to move their stock.

National Carbon, on the other hand, advances two reasons why it (and presumably others) either can't or won't repeat the special offers this coming winter:

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Buffalo Electro-Chemical Company, Inc.
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HAVE YOU DRAINED LAST WINTER'S ANTI-FREEZE?

**LEADING AUTOMOTIVE AUTHORITIES RECOMMEND DRAINING
USED ANTI-FREEZE EVERY SPRING, AND REPLACEMENT WITH
FRESH WATER AND RUST INHIBITOR FOR SUMMER DRIVING.
HERE'S WHAT YOU SHOULD KNOW...**

Even though an anti-freeze solution may be clear and rust-free after a winter's driving season it may have lost a large part of its inhibitor life. Even the anti-freeze manufacturers, car makers, and other qualified experts agree.

In order to maintain

Even the best anti-freeze should not be used the second season, for their rust inhibitors may weaken and lose their efficiency. Re-use may cause expensive repairs.

run to use new solutions each year. it is certainly cheaper in the long

Even the best anti-freeze should not be used the second season, for their rust inhibitors may weaken and lose their efficiency. Re-use may cause expensive repairs. Changing cooling solutions periodically makes the same good sense as changing motor oil.

Reference: **AMERICAN AUTOMOBILE ASSOCIATION BULLETIN APRIL 1951**
Pennsylvania Avenue at 17th Street N. W., Washington, D. C.

Reference: **NATIONAL BUREAU OF STANDARDS HAS CIRCULAR 506**
"Automotive Antifreezes"
U. S. Government Printing Office, Washington 25, D. C.
Price 15 cents

Reference: **SOCIETY OF AUTOMOTIVE ENGINEERS MANUAL**
"Maintenance of Automotive Engine Cooling Systems"
39 West 29th Street, New York 18, New York
Price \$2.00

Cooling System Care Pays!

Distributed as a public service by National Carbon Company
A Division of Union Carbide and Carbon Corporation, New York, N. Y.

Form 408-1087 (7-10-51) 10 x 5 1/2

LESSON for 40,000 car dealers, 220,000 service station operators: "permanent" equals one season.

- Dealer orders are continuing to roll in. The demand stream could hardly be described as a flood, but most suppliers are content with the August response. Considering the logically-to-be-expected letdown following the expiration of the special offers, post-"deal" business has been satisfactory.

- Suppliers, declares National Carbon, are bound to keep faith with their dealers. They can't very gracefully take away the advantage they gave those retailers who accepted the offers when business was slow.

Current Pitches: Regardless of whether the Du Pont or the National Carbon prediction will come to pass, they currently agree on one point: the sales emphasis (at least for the larger sellers) is away from special offers. Instead, glycol is expected to move under a two-pronged sales attack.

- Reliability of established name-brand "permanent type" antifreeze.

- Limitation of "permanent type" life to one season only.

Typical of the second sales pitch is the handout being distributed by National Carbon to 40,000 car dealers and 220,000 service station operators, through whose hands pass practically all the ethylene glycol antifreeze.

Headlined "Have You Drained Last Winter's Antifreeze?" (see cut) it summarizes the findings of the American Society for Testing Materials, American Automobile Assn., National Bureau of Standards and the Society of Automotive Engineers.

Representative excerpts from the sheet:

"Even though an antifreeze solution may be clear and rust-free after a winter's driving season, it may have lost a large part of its inhibitor life."

"Even the best antifreeze should not be used the second season . . . re-use may cause expensive repairs. Changing cooling solutions periodical-

ly makes the same good sense as changing motor oil."

"In view of the comparative cost of antifreeze and even of so minor a replacement part as a water pump or radiator, it's cheaper in the long run to use new solutions each year."

The tenor of the arguments appears to be keyed to the supply picture.

Other Times, Other Themes: A couple of years ago, when "permanent" antifreeze was much scarcer, some advertising went so far as to intimate that the lack of glycol was no great hardship. Reason cited: only one car in every five should use the "permanent" type.

By last year, of course, the shoe was on the other foot; the supply swelled so rapidly, the makers were hard put to dispose of it.

Better Control? Changes in point of packaging are also taking place. The trend is toward closer integration of the chemical makers and the canning operation. Can-your-own practices are being considered.

Latest to step in this direction is Dow. Although it is not yet ready to detail results, Dow has just about completed a full season of canning for private labels. Previously it sold all its glycol output in bulk.

And although Dow is still mum on future plans, speculation has it that:

- Dow might continue to push private label canning to the point where most of its material will go out in cans, or

- Dow might carry the marketing of the product one step farther, eventually offer its own brand of antifreeze.

The reasoning behind this swing runs about like this:

- When demand outstrips supply, fly-by-night black-market operators spring up, gouge the public, give the industry a black eye.

- On the other hand, when a surplus develops, independent operators, with no dealer responsibilities or "fair trade" policies to maintain, peddle their wares at cut-rates and unsettle the price structure worked out for the regular distribution channels.

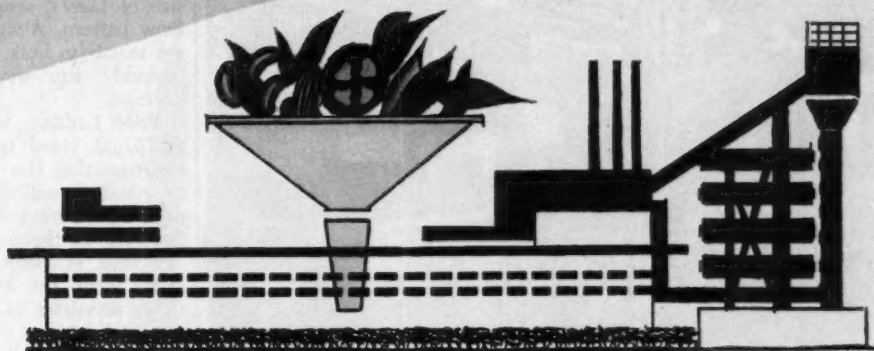
A quick rundown of other principal ethylene glycol makers' present practices or plans lines up this way:

- Top producer Carbide cans all its antifreeze grade glycol, distributes the largest share under the National Carbon "Prestone" label.

- Du Pont likewise sells all its antifreeze grade in cans, either as its own Zerex, or to General Motors, for distribution under the car company's labels.

- Jefferson Chemical cans no antifreeze but sells a considerable amount to parent Texas Co. for canning under

What do we know about your business?



when your business relates to vegetable oils or margarine production

The Harte System provides a modern approach to your growth problems, whether your plans call for the simple production of neutral oil or for a complete margarine plant. From original extraction to refined oil, from bleaching and deodorization to the finished margarine, your complete plant can be designed and erected by *one* organization.

The Harte files contain detailed records of nonconfidential processes. Put your problem of plans and plant up to our international organization . . . men and facilities with valuable engineering know-how. A word from you will bring a Harte representative to your office, without obligation.

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SPECIALISTS IN THE FOLLOWING PROCESSES: • Solvent Extraction Systems • Rubber Products • Vitamin Recovery • Synthetic Detergents
• Insecticide Plants • Clay Processing • Mixed Fertilizer Plants • Paper Mills • Ammonium Sulphate • Lime and Cement
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• Margarine Production • Steam Generating & Power Plants • Milk By-Products • Superphosphate Plants

284 TECHWOOD DRIVE, N. W., ATLANTA • NEW YORK • HOUSTON • MEXICO, D. F. • HAVANA • SYDNEY, AUSTRALIA

September 12, 1953 • Chemical Week



How Wyandotte Chemicals Saved 35% in Storage Space

By building its materials handling system around Lewis-Shepard SpaceMaster Electric Fork Trucks, Wyandotte Chemicals Company, Wyandotte, Mich., got more efficient storage for over 250 different items . . . in 35% less floor space. And many of Wyandotte's dependable L-S SpaceMasters work 16 hours a day with a minimum of costly maintenance attention.

WHY WYANDOTTE PICKED SPACEMASTERS

Here are some of the reasons Wyandotte supervisors selected SpaceMaster battery powered trucks: compactness; high capacity-to-weight ratio; full free lift; dependable performance; minimum maintenance.

SPACEMASTERS CAN SAVE YOU MONEY

Want proof? . . . Then, write for "Proof Folders" that show how companies in many industries are saving with Lewis-Shepard Electric Trucks. You're invited to inspect this proof . . . draw your own conclusions.

"Proof Folders" include facts, figures, and familiar company names. Every word is a direct quotation or approved by the company concerned. They are the true materials handling experiences of both large and small users in many industries, told in a way that's interesting and informative.

Send for "Proof Folders" and Comparison Charts today! If you prefer, call our local representative listed under "Trucks, Industrial", in the Yellow Pages of your telephone book.



The "MASTER" Line

114-9 Walnut St., Watertown 72, Mass.

Please send

- Electric Fork Truck Comparison Charts
- Proof Folders showing L-S Trucks at work

Name _____

Company _____

Street _____

City _____

State _____



DISTRIBUTION

the Texaco label.

• Mathieson has some of its output canned for it, supplies much of its product to distributor U.S. Industrial Chemical.

• Wyandotte's sales, while not the size of Dow's, seem to fall into the Dow pattern. Although present sales are mostly in bulk, it cans some, will probably can more to encourage business.

Price Ladder: Should the present \$3.75/gal. retail tag hold, the price structure that the makers are trying to stabilize will be similar to the pre-"deal" period. These are roughly the pegs at the main steps:

• Bulk ethylene glycol, antifreeze grade, tank car lots, 15¢/lb. dlvd. (This translates to \$1.50/gal.)

• Gallon cans "permanent" antifreeze to wholesalers, \$1.92/gal. net.

• Gallon cans antifreeze to dealers (retailers), \$2.51/gal. net.

Sure Thing: Last week, into the midst of the antifreeze peddlers' dreams floated a solid note of cheer. From Washington the word went forth that motor vehicle registration by the end of this year will probably reach 54.7 million, an all-time high and 2.7% more than the 53.3 registered in 1952.

Tying into these car figures, the antifreeze trade predictions for total gallonage run upwards of 95 million; the more optimistic estimates reach as high as 108 million gallons.

Broken down into "permanent" and nonpermanent (methanol, etc.) classes, the estimates run from 50-50 ratio (volume basis) to 58% "permanent" vs 42% nonpermanent sales.

Those who tend to play down the nonpermanent type doubtless are bearing in mind that another factor is working in favor of the glycol: present demand for methanol for uses other than antifreeze is known to be siphoning a big gulp of the alcohol.

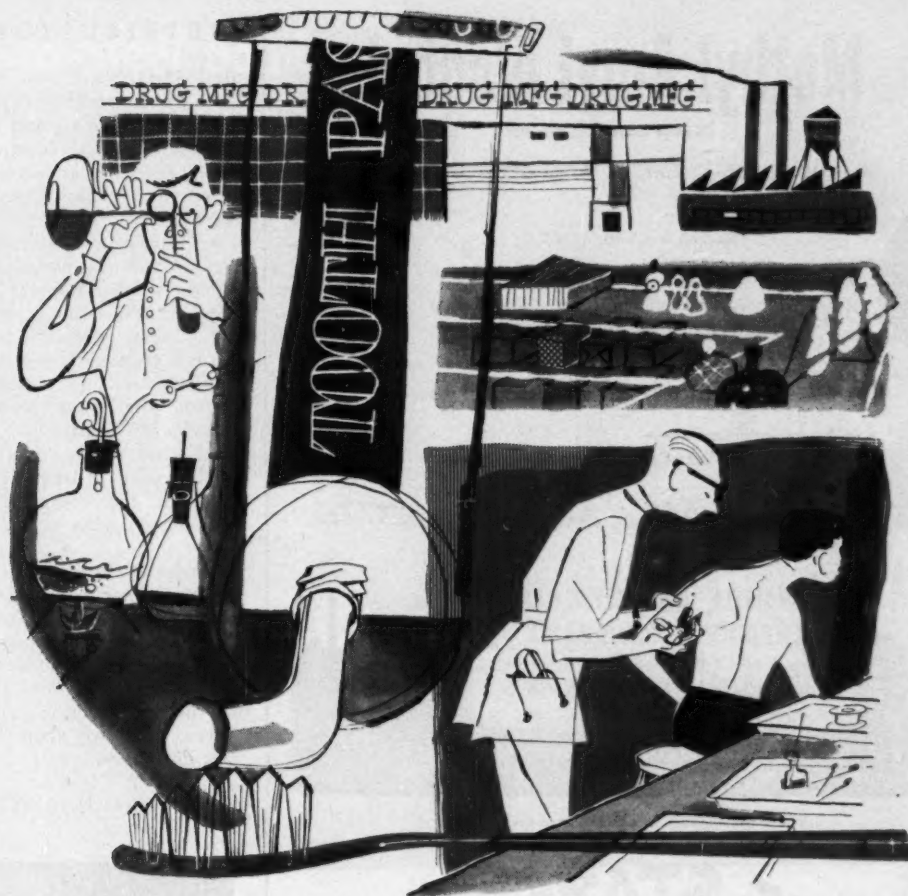
And with all the considerations of production and distribution running through their minds, there's one remedy that will ease the collective pains of the antifreeze makers—a good dose of old-fashioned winter weather.

For the Bookshelf

A series of "Crude Rubber Quality" seminars conducted in 1952 by the Rubber Manufacturers Assn. has resulted in the publication of a 99-page booklet, "Natural Rubber Buying." It is available at \$1 from the association's New York and Washington offices.

Here are other recent literature offerings:

- Commercial Solvent's new Tech-



Making Pharmaceuticals Pay Off

How Monsanto Phosphates Put More "Sell" Into Drugs. Carefully controlled purity . . . economical, realistic pricing . . . versatility in application . . . these are the features of Monsanto phosphates that spell more sales for drug manufacturers.

Monsanto accomplishes all these things because it is the world's largest producer of elemental phosphorus, with all the facilities that implies.

Size, for example, means variety of product

line. Some Monsanto phosphates furnish the polishing power in tooth pastes. Others help in the production of antibiotics and antimalarials, act as dietary supplements and aid in relieving acid indigestion.

To find out more on how Monsanto Phosphates can help *your* business, write today to **MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri.**



MODERN ANTIBIOTICS such as penicillin are made possible by the use of Monsanto phosphates, an important aid in their manufacture.



MODERN DENTIFRICES have greater cleaning power because of the mild abrasive action of Monsanto dicalcium phosphate.



KEY TO PURITY of these phosphates is the 99.9% purity of the Monsanto elemental phosphorus from which they are processed.



SERVING INDUSTRY... WHICH SERVES MANKIND

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle, Twin Cities. In Canada, Monsanto Canada Limited, Montreal.

Methyl Amyl Alcohol

(Methyl Isobutyl Carbinol)

A LOW-PRICED CHEMICAL WITH DIVERSE USES

ORDER
NOW
FROM

- * For Ore Flotation—
an efficient frothing agent
- * For Nitrocellulose Lacquers and
other Protective Coatings—
a latent solvent and reactant
- * For Brake Fluid Formulations—
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A Division of
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UCC

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In Canada: Carbide and Carbon Chemicals, Limited, Toronto

For prices and technical information, call the nearest Carbide office

DISTRIBUTION

nical Data Sheet No. 19 describes three commercial hydroxylamine salts, the chloride, sulfate and acid sulfate.

- An eight-page brochure for users of polyethylene carboys has been prepared by the Plax Corp. (Hartford, Conn.).

- "Calcium Chloride in Refrigeration" is Solvay's technical and engineering service Bulletin No. 4, now available in a sixth edition.

- Carbide and Carbon Chemicals Co. has prepared a technical bulletin on ethylene diamines, diethylene triamines, triethylene tetraamine and tetraethylene pentamine.

- Latest product-data sheet compiled by J. T. Baker Chemical Co. describes the company's technical grade crystal zinc nitrate.

Kanawha Dock: Carbide and Carbon Chemicals has contracted with the Dravo Corp. for the development of an 830-ft. barge docking area along the north shore of the Kanawha River near Institute, W. Va. The facilities will include mooring cells for eight barges, plus two short loading and unloading piers.

Squeeze Price: Hartford's Plax Corp.



Reg. U. S. Pat. Off.

HIGRADE MURIATE OF POTASH
62/63% K_2O
GRANULAR MURIATE OF POTASH
60% K_2O Min.
MANURE SALTS 20% K_2O Min.

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Siamese Twins

DESIGNED to sell items in pairs—e.g., catalyst and inhibitor, shoe polish and shoe cleaner—2-in-1 polyethylene bags are now being promoted by Plastic Packaging Co. (Chicago). Sales lure: to insure proper dealer handling of kindred items, to tie in new or slow-moving products with established items.

Glass-to-Steel Bond Supports *5½-ton* Truck



The corrosion resistance of glass *plus* the working strength of steel

For this unusual demonstration, the faces of two steel discs 4" in diameter were glassed, then the discs were put face-to-face and fired at the same high temperature used in manufacturing Pfaudler glassed steel equipment. The bond between glass and steel, created by chemical action during this firing, locked the two pieces together so powerfully that the full weight (11,000 lbs.) of the truck failed to pull them apart. In a subsequent test, this bond withstood a pull of over 19,000 lbs., or 1,500 lbs./sq. in.

High temperature firing locks Pfaudler glass to steel and makes it hard and tough.

Because it can be so durably bonded to steel, glass, with its *almost universal corrosion resistance*, is widely used for both pilot plant operations and full-scale production. Pfaudler glassed steel reactors in capacities up to 3500 gallons are commonplace in chemical processing today. These units are equipped with

agitation, can be jacketed, and are supplemented by a complete line of glassed steel accessories. Custom-built reactors as large as 8300 gallons, for severe chemical service, have been constructed. Glassed steel fractionating columns and evaporators have solved many serious corrosion problems.

Even at elevated temperatures and pressures, Pfaudler glassed steel is resistant to all acids except hydrofluoric. And now, with a new Pfaudler glass, it is possible to handle not only acids but also *alkaline* solutions up to pH12 and up to 212°F. Thus it is possible to perform a wide variety of reactions in a single glassed steel vessel.

Pfaudler factories are located in Rochester, N. Y.; Elyria, Ohio; Leven, Fife, Scotland; and Schwetzingen, Baden, Germany. Sales offices in all principal cities.

Write for Bulletin 902-L-4 our new general catalog on Pfaudler equipment.

CLOSE-UP showing how the glassed steel discs were connected to crane so as to support entire weight of 5½-ton truck. Below: close-up showing steel discs "glassed" together.



THE PFAUDLER CO.



ROCHESTER 3, N. Y.



NOW... a deodorant compound
that needs no deodorant

Lorothidol*

Lorothidol is colorless and develops no odor on aging in soap. It prevents growth of many micro-organisms when used in 1% concentration in soap, thereby eliminating development of body odors. It is non-sensitizing and non-irritating to human skin. For information and samples write today to:

SPECIAL CHEMICALS DIVISION

Winthrop-Stearns INC.
1450 BROADWAY, NEW YORK 18, N. Y.

* Trade-mark, Hilton-Davis Chemical Co. Div. Brand of 2,2'-thiobis (4,6-dichlorophenol)

CHEMICAL FINANCING *is NOT ALL we do*

If you are considering new projects or Company acquisitions in your growth picture, perhaps we can be helpful even though your Company may not need financing.

For information consult:

Chemical Department

M. STUART ROESLER, Vice President

RICHARD B. SCHNEIDER, Vice President

Empire Trust Company

7 WEST 51st STREET, NEW YORK 19, N. Y.

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

DISTRIBUTION

has reduced the price of its polyethylene carboys and squeeze bottles by an average of 10%, effective this month. The move follows a 2% reduction made in May.

Wisconsin Warehouse: The Western Condensing Co. (San Francisco) is doubling its warehousing capacity at Appleton, Wis., with the building of a 25,600 sq.-ft. standardized steel unit alongside its present facilities.

Natural Latexes: The Shawinigan Products Corp. (New York) has been appointed exclusive U.S. sales agent for natural rubber latexes made by Revertex Ltd. (London, Eng.).

Pollution Out: The Publishers' Paper Co. (Oregon City, Ore.) has put a 120,000-gal. barge into service for the moving of sulfite liquor wastes from its plant on the Willamette River to the stream's confluence with the larger Columbia River, where the wastes can be safely dumped.

Flexible Fusion: Continental Can has combined its two recent flexible-package acquisitions, the Benjamin C. Betner Co. and Shellmar Products Corp., into a single Shellmar Betner Flexible Packaging Div.

Regional Sales: Emery Industries (Cincinnati) has reorganized its upper-echelon salesforce into a regional structure. The Philadelphia office manager, for instance, becomes the eastern district manager and the Charlotte, N.C., office becomes the headquarters for the southern district. Harry Armitage, formerly head of the New York office, becomes district manager at large.

Chicago Chlorinates: Hercules Powder has chosen the Central Solvents & Chemicals Co. as its Chicago distributor for chlorinated paraffins.

Combined: Monsanto's Organic Chemicals Div. has combined two independent sales groups into a single department of Petroleum Chemicals and Functional Fluids Sales.

Atlantic Move: The Fulton Bag & Cotton Mills have acquired an East Coast manufacturing facility by buying the Savannah plant of Mente & Co. This increases Fulton's number of plants to nine.

Expanded Agency: Kessler Chemical has expanded the agency area handled for it by San Francisco's R. E. Flatow & Co. The distributor's new territory will include the entire West Coast.



Pattern for profit...

and a remarkable chemical conditioner, too!

This is an electron photomicrograph—at 35,750 magnification—of attapulgite, the unique mineral from which Attasorb is made.

And Attasorb is our newest product—a low-priced, highly effective conditioning agent for chemicals. It will be available in carlots by midsummer.

You're likely to be interested—technically and profit-wise—in the following properties of Attasorb:

- The extremely fine needle-like particles you see above appear to explain the excellent adherence to the chemical being coated
- Its particles all lie in the sub-sieve range
- Attasorb is highly sorptive (active surface area, 13 acres per pound)—of special merit where the chemical is hygroscopic
- Because of its light weight, a little bit goes a long way

- Its buffering abilities will neutralize traces of acidity or alkalinity

Attasorb's price is very low—only 2½¢ to 3½¢ per pound in carload lots, depending upon freight charges.

Already, manufacturers of high-analysis fertilizers, ammonium nitrate, napalm, urea, and certain plastic compositions have carried out approval and acceptance tests. Further use of Attasorb as an anti-caking agent is indicated wherever chemicals are sticky or waxy, or where they set up and lose flowability under conditions of pressure, atmosphere, or fluctuating temperature.

Does the foregoing suggest an adaptation of Attasorb to your field of activity? Detailed data, generous sample and technical assistance are yours for the asking.

ATTAPULGUS Minerals & Chemicals Corporation



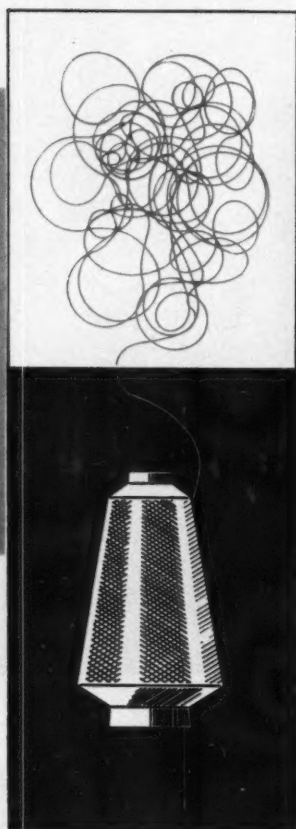
DEPARTMENT A

210 WEST WASHINGTON SQUARE, PHILADELPHIA 5, PA.

SEE OUR EXHIBIT—Space S-57, 24th Exposition of Chemical Industries, Philadelphia, November 30—December 5.

Stauffer Chemicals for

Synthetic textiles



Today, 20% of the total textile fiber produced is manufactured synthetically. Of this figure rayon amounts to well over 805 million pounds. Carbon Disulphide, an important raw material in the viscose process, where it serves as the reagent to chemically convert the crude pulp cellulose to the raw "viscose" material, is one of the many heavy chemicals Stauffer supplies to industry. Other Stauffer chemicals used in textiles include caustic soda, sulphuric acid, chlorine, sodium hydrosulphide, and tartaric acid.

Adequate reserves of these raw materials are important to the rapid growth of Synthetic Textiles. To keep pace with this expansion Stauffer is furnishing the manufacturers with the necessary chemicals from the different plants conveniently located in production centers.

Stauffer Products:

Aluminum Sulphate*
Borax
Boric Acid
Boron Trichloride
Carbon Disulphide
Carbon Tetrachloride
Caustic Soda
Chlorine
Citric Acid
Copperas*
Cream of Tartar
Ferric Sulphate*

Sulphur (processed) for all uses
Sulphur—Rubbermakers
Fire Extinguisher Fluid
Insecticides and Fungicides
Muriatic Acid*
Nitric Acid*
Potassium Nitrate
Rochelle Salt
Silicon Tetrachloride
Sodium Hydrosulphide
Sodium Silico Fluoride*
Sulphuric Acid

Sulphur-Insoluble (in CS₂)
(special-purpose rubber making)
Sulphur Chlorides
Superphosphate*
Tartar Emetic
Tartaric Acid
Titanium Tetrachloride
Titanium Trichloride Solution
"Zol" Dry Cleaning Fluid

(West coast only)*

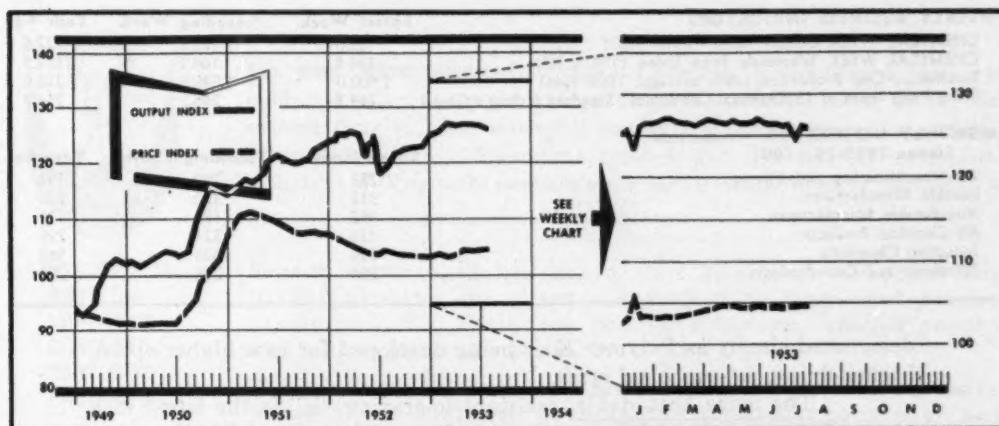


Stauffer Chemical Company

420 Lexington Avenue, New York 17, New York

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MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

With this month marking the end of the quarter in which a sales slump was feared (CW, Sept. 5), many chemical makers are happily shrugging off the comparatively insignificant dip that did materialize.

Fact is, the slight faltering—being laid to seasonal vacation shut-downs—wasn't bad enough to deflect producers from swinging into full fall production schedules.

And if most chemical sellers are unswerving in output plans, not a few are also adamant in maintaining earlier-quarter price hikes that eased them out of the former low-ceiling rising-cost squeeze. Some segments of the chemical process industries are still feeling the bumps of springing, long-strapped-down prices.

For instance, glycerophosphate users (vitamin preparations, tonics) this week are paying about 30¢/lb. more for calcium, magnesium, iron and sodium salts—a first-since-1950 tag rise.

Higher container and handling costs, however, are behind one maker's increased differential between drum shipments and tank car quantities of several solvents. Butanol, acetone, butyl acetate, among others, will hold at current tank car prices, but cost more at c.l., l.c.l.

One price-reducing concession underscored: customers may consolidate solvent and plasticizer orders for compartmental tank car deliveries. Same type truck service is also available in Bishop (Tex.), Chicago (Ill.), and New York areas.

On the other hand, some acrylic plastic sheet buyers can now pocket a 5% discount saving. Rohm & Haas last week posted a Plexiglas pricing system on shipments of 3,000 sq. ft.

The new schedule also includes a 2% reduction on untrimmed sheeting, but raises the minimum quantity on single orders from 150 to 500 sq. ft.—a maneuver designed to steer small purchasers to dealers.

Still in the works, but now being tested by top aircraft makers, is a brand-new R & H acrylic-based sheet. The material, as yet unnamed but

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	126.0	126.2	122.6
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.8	104.7	102.5
Bituminous Coal Production (daily average, 1,000 tons)	1,600.0	1,595.0	328.0
Stock Price Index of 13 Chemical Companies (Standard & Poor's Corp.)	244.8	246.0	244.5

MONTHLY INDICATORS—Production (Index 1935-39=100)

	Latest Month	Preceding Month	Year Ago
All Manufacturing and Mining	233	240	193
Durable Manufactures	312	320	230
Non-durable Manufactures	192	198	179
All Chemical Products	328	324	299
Industrial Chemicals	634	626	565
Petroleum and Coal Products	298	296	259

designated simply as Polymer K, is being developed for new higher-speed, higher-flying, jet-propelled craft.

The more heat-stable, resistant-to-crazing "K" is the latest in a series of glazing materials to match more-demanding military needs.

Future easing of the nation's insurance against a too-sudden demand for strategic materials—its stockpiles—may be a Washington economy action, but it's a cinch last week's slow-down-the-build-up move wouldn't have taken place had the piles been inadequate.

ODM's new order does not affect existing contracts, but forbids most future agreements running for more than a year. Two other provisions: Buying will be concentrated on items "considered most vital"; target goals for some materials will be pushed back to June '55.

Effective immediately, though, are lower polyethylene glycol schedules. The cuts—about 1½¢/lb.—were initiated by pioneer producer Carbide and Carbon on its Carbowax liquid and solid compounds.

Another maker (Jefferson Chemical) is quoting comparable 25¢/lb. tags for tank car quantities of the 200 through 600 liquid grades.

Although most benzene hexachloride (BHC) producers are cutting back production, at least one is looking toward a switch next year from the current snail-paced insecticide movement. Pennsalt will sink an additional \$2 million into its Calvert City (Ky.) development (upping it to \$10 million) to include a BHC producing unit.

A new continuous process is expected to turn out the material in time to make deliveries for the 1954 season.

And not quite—but soon to be—ready for the market is Ethyl Corp.'s high gamma (80) isomer BHC. It's pegging the price at twice the 15 gamma isomer level—1.5¢/gamma, delivered.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending Sept. 5, 1953

UP		Change	New Price			Change	New Price
Calcium glycono-phosphate		\$.30	\$ 2.30	Titanium dioxide, bgs.,			
Imported casein Argentine,				c.l., divd.		\$.015	\$.225
acid-precip.		.0025	.25				
DOWN		Change	New Price			Change	New Price
Sodium nitrate, Chilean, bulk ton		\$4.00	\$49.50	Polyethylene glycols, liquid grades			
Sodium nitrate, dom., bulk ton,				200, 300, 400, 600		\$.015	\$.25
f.o.b., Hopewell (Va.)		4.00	43.50				

All prices per pound unless quantity is stated.

CHEMICALS OUTLOOK

September 1953



USE OF KREELON IMPROVES CONCRETE "DRY-MIX" PRODUCTS

OF INTEREST TO PAPERMAKERS AND PAPER BUYERS

DATA, SAMPLES, TECHNICAL ASSISTANCE

This news bulletin about Wyandotte Chemicals products and their applications is published to help keep you posted. Perhaps you will want to route these and subsequent facts to other interested members of your organization. Additional product information, through Wyandotte research and technical service facilities, and trial quantities of Wyandotte products are always available upon request. May we serve you?

Recent experience has shown that Wyandotte Kreelon* imparts higher density and greater strength to "dry-mix" concrete products . . . including concrete blocks, tamped sewer pipe and concrete drain pipe.

The addition of Kreelon, an alkylarylsulfonate surfactant, permits the addition of slightly greater amounts of water to the "dry-mix." This results in a smoother, more refined finish, greater compressive strength, faster, more uniform curing and a reduction in mold abrasion. It follows that equivalent compressive strength may be obtained with lower cement costs.

If you want to speed production and improve the quality and appearance of your "dry-mix" concrete products, try Wyandotte's Kreelon yourself. We'll be glad to work with you.

One of the latest developments in the use of Wyandotte Purecal* is the improvement of standard grades of coated paper with little or no increase in cost.

For example, working directly with papermakers, we have found that when we substitute Purecal M Fine (Wyandotte's new grade of precipitated calcium carbonate) for Purecal M, in almost every case the printed sheets tend to have better register, greater depth, with more contrast, sharper detail, and more pronounced highlights in halftones. Other results to date have been: higher gloss and sheen, better coating-lay with less pattern.

The improvement of paper-coating carbonates is only one of many paper projects under continuous investigation at Wyandotte. Our new research center features a well-equipped paper laboratory, maintained for research on the use of Wyandotte products in this field. These modern facilities are always available for work on your particular problems.

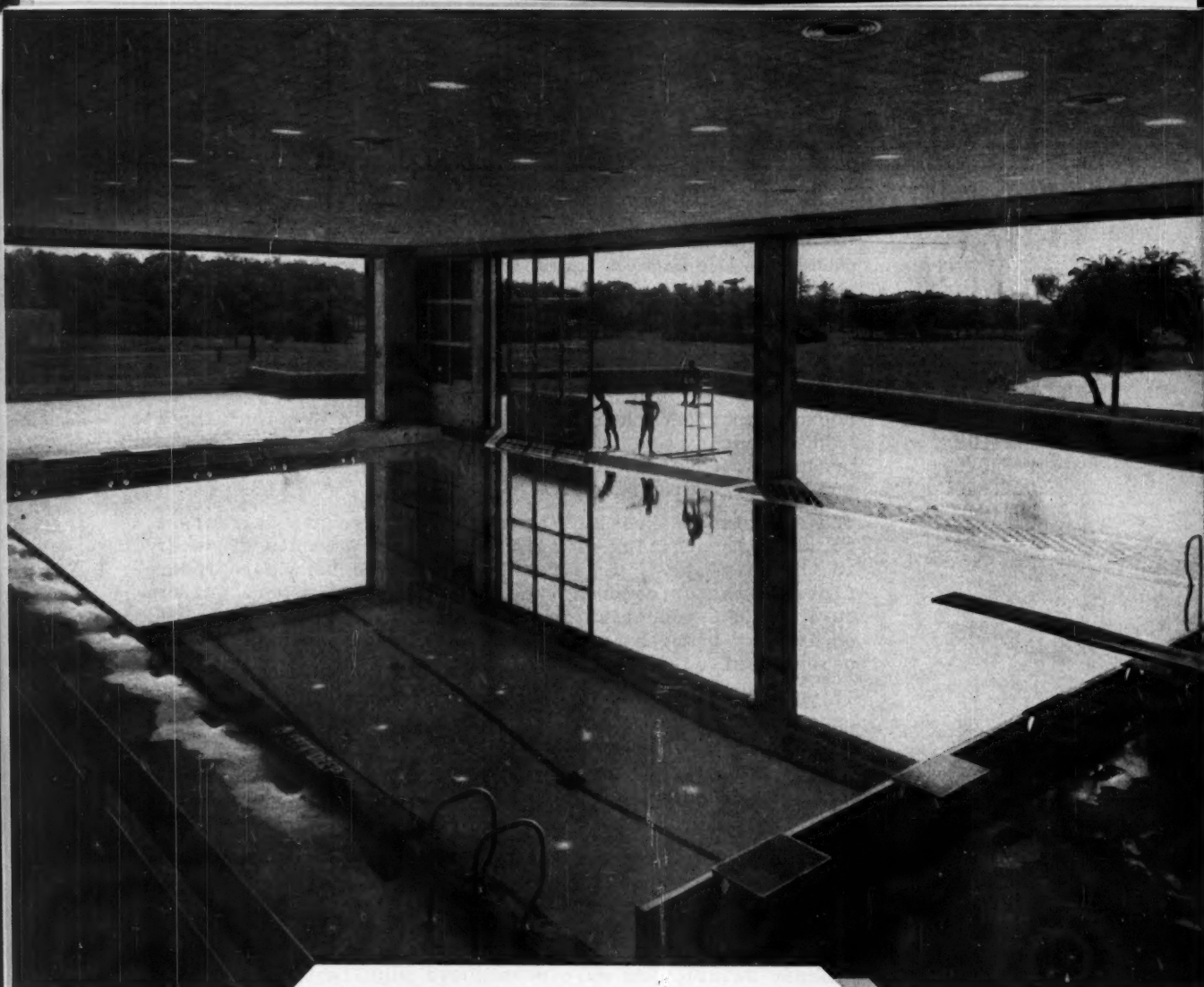
Please help us to help you by giving as much information as possible about the process or problem you're concerned with, each time you write for data, samples or technical assistance. This will enable us to assess your needs more exactly and fill your requests more promptly.

*REG. U.S. PAT. OFF.



WYANDOTTE CHEMICALS CORPORATION
WYANDOTTE, MICHIGAN • OFFICES IN PRINCIPAL CITIES

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA • CALCIUM CARBONATE • CALCIUM CHLORIDE • CHLORINE • HYDROGEN • DRY ICE • GLYCOLS • DOT
BMC • SYNTHETIC DETERGENTS • CARBOSE* (Sodium CMC) • ETHYLENE DICHLORIDE • PROPYLENE DICHLORIDE • AROMATIC SULFONIC ACID DERIVATIVES
SOIL CONDITIONERS AND AGRICULTURAL CHEMICALS • OTHER ORGANIC AND INORGANIC CHEMICALS



Pool in General George S. Patton
Memorial Community Building,
Detroit

Photo courtesy Giffels & Vallet, Inc.
L. Rossetti, Associated Engineers
and Architects, Detroit

Chlorine...

for water purification

Wherever water purification is needed, chlorine does the job safely, effectively, economically.

Uniformly high quality GLC Graphite Anodes are on the job too—helping the electrolytic industry meet the growing civilian and defense needs for chlorine and caustic soda.

ELECTRODE DIVISION

Great Lakes Carbon Corporation

Niagara Falls, N. Y.



Morganton, N. C.

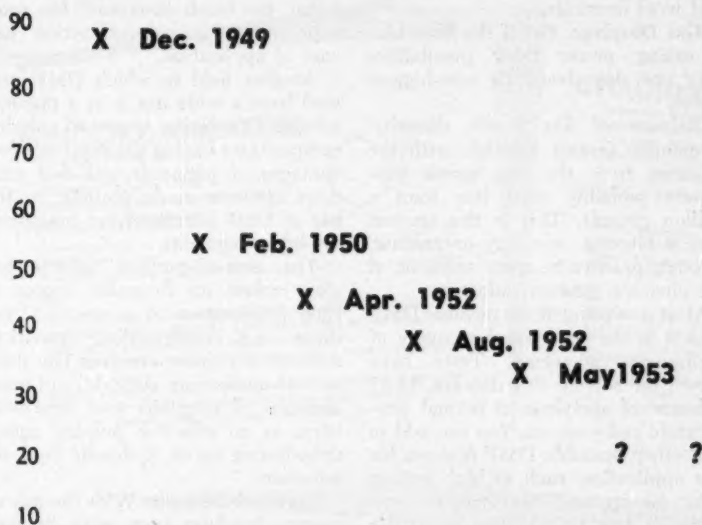
Graphite Anodes, Electrodes, Molds and Specialties

Sales office: Niagara Falls, N. Y. **Other offices:** New York, N. Y., Chicago, Ill., Pittsburgh, Pa.

Sales Agents: J. B. Hayes, Birmingham, Ala., George O'Hara, Long Beach, Cal., Great Northern Carbon & Chemical Co., Ltd., Montreal, Canada.

Dimethyl Formamide

¢/lb. (55-gal. drums)



TWO QUESTION MARKS: What eventual price—and when?

Small But Hopeful

Faint echoes of the current and recent synthetic fiber knocks that reverberated through the industry (CW, Aug. 8), may this week be washing up against at least one organic solvent—dimethyl formamide—effectively braking consumption. But chances are that the easing acrylic take may well spark a greater push for a host of other outlets.

And if dimethyl formamide lacks anything, it is certainly not a multitude of potential uses. It has been labeled "a close approach to the universal solvent". One facetious comment: any closer and there wouldn't be anything to contain it.

The versatile solvent was pioneered and introduced by Du Pont some four years ago. At the moment only two other companies are showing a more than passing interest: Rohm & Haas, which announced tank-car-quantity availability earlier this year; and Commercial Solvents, which moved into "sample bottle" production a few weeks ago.

Explanation for the paradoxical situation—a near-ideal product, a dearth of scrambling would-be producers—is tied in with major maker Du Pont's acrylic fiber programs. And the com-

pany is understandably tight-lipped as to details concerning output, consumption, and the like.

It's no secret, though, that the bulk of Du Pont's production—probably as much as 90-95%—of DMF, as it calls the solvent, winds up in the manufacture of acrylonitrile-based fibers like its own Orlon.

An industry estimate places Du Pont's Orlon capacity at roughly 40-50 million lbs./year. The acrylic is spun in a 20% DMF solution with a probable 5%/year loss. Assuming a 4 lb.-DMF/1 lb.-fiber proportion, simple arithmetic gives an approximate 9 million lbs./year DMF replacement need. That level of consumption, however, may have been hit when the synthetic boom was on. There's no doubt present difficulties have caused a slackening.

One theory advanced for the dyeing problems that have lately popped up for the acrylics is the fact that they are spun in organic solvents. A fiber thus spun, it is said, has a "case hardening" that makes it difficult to absorb dyes.

This could be one reason, too, for American Cyanamid's complacency during the current hassle. According

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MARKETS

to patent, its X-51 acrylic fiber may be formed by spinning under water, rather than in the more expensive solvents. Result: a so-called "hydrogel state" in which the fiber will readily absorb many of the common cotton and wool dyestuffs.

Gas Dissolver: But if the fiber take is easing, newer DMF possibilities may one day dwarf its now-biggest outlet.

Balance of Du Pont's dimethyl formamide output together with the amounts from the two newer producers probably total less than a million pounds. This is the amount that is filtering, one way or another, through practically every segment of the chemical process industries.

Most promising of the possible DMF uses is in the economical recovery of high-purity acetylene. Tests have shown the solvent will dissolve 33-37 volumes of acetylene at normal temperature and pressure. You can add to this, other desirable DMF features for this application, such as high boiling point (as opposed to currently used acetone's low point), low molecular weight, high thermal and chemical stability.

With the acetone-for-acetylene solvent market crowding some 25 million lbs./year, this plum looks mighty tempting to DMF boosters.

And the comparative newcomer has also shown promise as a selective solvent for many other gases: hydrogen cyanide, sulfur dioxide, hydrogen chloride, chlorine, to name a few.

Possibilities Unlimited: But that use only scratches the DMF potential. It is being billed as one of the most powerful solvents for aromatics. This characteristic has it bucking furfural as a gas oil and lube oil refining aid in the petroleum field.

Whether or not a market as a solvent for surface coating materials opens up, DMF is without a doubt a strong solvent for nitrocellulose, cellulose acetate and triacetate, and vinyl resins. Practical formulations for the coatings, however, have not as yet been developed. Reason: the "wonder" solvent has some relative disadvantages—hygroscopicity and a slow rate of evaporation—as a direct replacement for conventional solvents. This, though, doesn't quite dampen the hopeful makers' enthusiasm. DMF is expected to find application in special formulations requiring "unique" properties such as high solids content within fixed viscosity limits.

But the list of possible end uses seems endless. As a pharmaceutical intermediate solvent, dimethyl formamide has matched its properties

against nitrobenzene as an inert reaction medium in the preparation of pure crystalline sulfa drugs.

And whereas the polyethylene glycols and nitromethane are still tops as solvents for derivatives of nitrofurans, the brash newcomer has some superiorities in solvent action and ease of application.

Another field in which DMF may well have a wide use is as a pigment solvent. One claim: improved coloring compositions having the combined advantages of pigments and dye solutions are now made possible by the use of DMF for dissolving heretofore insoluble pigments.

The near-all-purpose solvent has also racked up favorable scores in such applications as a reaction medium (e.g., chlorination, cyanation, sulfonation); paint remover (by itself or with methylene chloride); in manufacture of dyestuffs and intermediates; as an effective pulping agent, dehydrating agent, hydraulic fluid, *ad infinitum*.

Economic Stopper: With the raft of not-now-but-later uses, with its producers more than anxious to supply quantities from a test bottle to a tank car, and with obviously better-than-other solvent characteristics, the inevitable market-place question pops up: what's holding dimethyl formamide back?

The answer can be summed up in one word—price. Current DMF tags range from a tank car 33¢/lb. to 36¢ in drums—high for a solvent despite its bright performance. Compare that with acetone, for example, which is now selling for about 8½¢/lb.—or furfural at a not unreasonable 11½¢, or nitrobenzene at a similar 11-12¢/lb. level.

But the economic strapper may one day be licked. When originally introduced, dimethyl formamide was pegged at a high 85½¢/lb. Subsequent cuts have whittled the price to its current level. And Du Pont—which will probably pace the field for a long time to come—sees the definite possibility of further price reductions. But the best price depressant, the company is quick to point out, is still a swelling market.

Shun the Fast Buck

Battlelines are being drawn this week in at least one arena of the sprawling plastics industry. Prime objective: recapture of a not-too-long-ago lusty vinyl film market.

A meeting this week in New York of top vinyl processors, resin producers, and representatives of mail order,

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HOOKER SOLVENTS

MONOCHLOROBENZENE

Synonym: Phenyl Chloride
Formula: C_6H_5Cl
Molecular Weight: 112.5
Appearance: Clear, colorless liquid



TYPICAL PROPERTIES

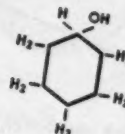
Freezing Point $-44^{\circ}C$
Distillation Range 131.2° to $132.2^{\circ}C$
Specific Gravity, $15.5^{\circ}/15.5^{\circ}C$ 1.114

USES

INSECTICIDAL INTERMEDIATE: DDT and other insecticides.
DYESTUFF INTERMEDIATE: Sulfur black and brown dyes.
CHEMICAL INTERMEDIATE: Organic synthesis.
SOLVENT: Paints, varnishes, lacquers, paint removers; general use.
HEAT TRANSFER FLUID: Suggested for condensing vapor systems, such as glass-enameled vessel jackets, which cannot stand high steam pressures.

CYCLOHEXANOL

Synonym: Hexahydrophenol
Formula: $C_6H_{11}OH$
Molecular Weight: 100.1
Appearance: Viscous, colorless liquid with pleasant, aromatic odor.



TYPICAL PROPERTIES

Freezing Range High Grade
Boiling Point 18° to $22^{\circ}C$
Specific Gravity, $25^{\circ}/15.5^{\circ}C$ 0.943
Flash Point $67^{\circ}C$

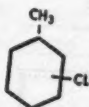
Tech. Grade
 $-10^{\circ}C$ to $-20^{\circ}C$
 $161.7^{\circ}C$
0.939
 $61^{\circ}C$

USES

SOLVENT: For resins, metallic soaps, dyes, fats and oils.
BLENDING AND STABILIZING AGENT: In textile soaps and dry cleaning agents.
HOMOGENIZING AGENT: For lacquers, varnishes and paints.
ALSO USED: In furniture and metal polishes, shoe creams, floor waxes, degreasing of leather, lubricating oils, also a plasticizer and ingredient of adhesives, and as a chemical intermediate in organic synthesis.

MONOCHLOROTOLUENE

Synonym: Methylchlorobenzene
Formula: $CH_3C_6H_4Cl$
Molecular Weight: 126.5
Appearance: Clear, colorless to straw-colored liquid.



TYPICAL PROPERTIES

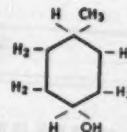
Freezing Point below $-45^{\circ}C$
Distillation Range 158.3° to $161.7^{\circ}C$
Specific Gravity, $15.5^{\circ}/15.5^{\circ}C$ 1.080

USES

SOLVENT: Rubber and synthetic resins.
INTERMEDIATE: Manufacture of rubber accelerators, chemicals.

METHYL CYCLOHEXANOL

Synonym: Hexahydrocresol
Formula: $CH_3C_6H_{10}OH$
Molecular Weight: 114.1
Appearance: Light straw-colored, neutral, viscous liquid.



TYPICAL PROPERTIES

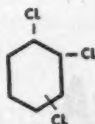
Distillation Range 155° to $180^{\circ}C$
Specific Gravity, $15.5^{\circ}/15.5^{\circ}C$ 0.924
Flash and Fire Points $71^{\circ}C$

USES

SOLVENT: For cellulose acetate, nitrocellulose and other cellulose esters for lacquers and coating compositions.
ANTI-OXIDANT: In lubricants.
BLENDING AGENT: For special textile soaps and detergents.

TRICHLOROBENZENE, Tech.

Formula: $C_6H_3Cl_3$
Molecular Weight: 181.5
Appearance: Clear, almost colorless liquid



TYPICAL PROPERTIES

Freezing Point $10^{\circ}C$
Distillation Range 5° incl. $216^{\circ}C$
Specific Gravity, $15.5^{\circ}/15.5^{\circ}C$ 1.466

USES

INSECTICIDE: Soil poison for termites.
SOLVENT: Fats, oils, waxes, resins; crystallization solvent.
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MARKETS

chain and department stores may well fashion a trident to (1) drive most of the "traders" and "fast-buck" artists out of the field, (2) upgrade the quality of vinyl plastic film end-products on the nation's retail counters, and (3) regain the confidence—and patronage—of many fed-up plastics customers.

Ostensibly the purpose of the current get-together is to crystallize plans for pushing acceptance of a recently promulgated Dept. of Commerce vinyl film standard. To accomplish that aim, the trade plans to retain the services of a merchandising and sales promotion group (Ralf Shockey & Associates), and has indicated a willingness to plunk down a reported \$150,000 over a two-year period.

It's no news, of course, that many retailers have been—and are—slashing store space allocations for displaying vinyl film and sheeting items. Indeed, not a few of them have actually relegated the "plastics" to basement bargain counters.

Inferior materials, poor styling, "bad" publicity—especially the "cheap substitute" label—are the reasons most frequently advanced for the sales-sapping action.

But despite constant castigation by suppliers and the more conscientious fabricators, the corner-cutting, make-a-fast-dollar operators have blithely continued to turn out a raft of cheap vinyl film consumer products including raincoats, shower curtains, aprons, and the like. Low, too, and loaded with one-shot irresistibility, is the cut-rate price—a headache-inducer to makers trying to maintain quality.

Now, recognizing that the first step in revitalizing an ailing industry must be education at the retail-fabricator level, concerned members of the Society of the Plastics Industry are willing to back up a full-scale publicity and promotion barrage that includes these broad objectives:

- Encourage all vinyl film processors to adhere to the established specification standards;
- Recommend that fabricators buy only film bearing a newly designed "hallmark of approval";
- Advise retailers to purchase vinyl products manufactured from film made in accordance with standard specifications.

But whether or not the multimillion-dollar vinyl film market ever gets hauled out of the cellar, this much is certain: the industry has formed its own hoisting battalion, and the first heave-ho takes place this week.

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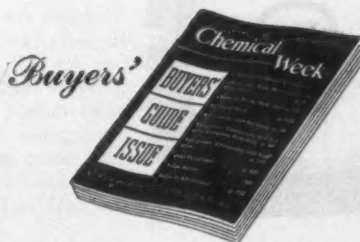
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SPECIALTIES . . .

Simplifying the Cleanup

Paint brush cleaner sales hold up despite the increasing use of water-based paints and the rising use of rollers.

Latest formulations feature fast cleansing—permit switch from one color to a contrasting color in minutes—or a rapid, final cleanup.

There's no getting around it—behind the trend toward do-it-yourself is the fact that nowadays it's easier to do it yourself. Chemical specialties makers have been among the leaders in simplifying household chores, and paint brush cleaners exemplify the possibilities in such task-easers.

Paint brush cleaners are by no means novelties—yet in the past few years two factors relating to the paint industry have vitally affected the cleaner business, too:

- Increasing use of water-based paints. These paints—butadiene-styrene, casein, vinyl types—can be washed out of the brush by rinsing in water.
- Awakening interest in rollers for applying paints. Rollers got their biggest boost in home painting, but are also coming into use industrially. They have, of course, by no means eliminated the brush.

More for Everyone: A check with a number of paint dealers and with makers of the cleaners has indicated that water paints have far from hurt sales; oil paints, in fact, though not growing at the pace of water-based types, have enjoyed a good market; and cleaners have moved along with them. Too, there seems to be a greater use of the paint brush cleaners by professional painters, who formerly cleaned their equipment with thinner-type products.

It is a little early yet to assess the impact of the roller on the cleaner market. Some dealers feel that low-cost of rollers—little more than \$2 for roller, handle and pan, with replacement roller under a dollar—will tend to make home painters discard them after one use.

But cleaner makers have other ideas. Their products work well with the roller fleeces, and some companies have begun packaging their liquid cleaners in tall (10½ in.) cans, in which the roller can be placed and shaken to clean it. Typical of these products—there are a number of them—is E Z Paint Corp.'s (Butler, Wis.) cleaner.

Quick Change: Within the past year or so, a relatively new sort of

cleaner has appeared on the market. Formulated with high-flash-point chlorinated solvents and special oils, it is claimed to permit a painter to switch paint colors within a minute or so. G. N. Coughlan's Process 33, and Secons, marketed by Goodman and Hanlon, are representative products.

These rapid-change products are



HOUSEHOLD TOUCH-UP: To ease painting chores, paint brush cleaners.

not designed for softening old brushes; are suggested only to keep new brushes in good shape. On the other hand, most of the common cleaners now on the market are said to restore stiff old brushes, too, in addition to cleaning them.

Some of these cleaners, the powder types—Patent Cereals Co.'s (Geneva, N.Y.) Dic-a-Doo is an example—which are dissolved in water, are essentially alkaline salts. Many powders of this sort are made with trisodium phosphate or tetrasodium pyrophosphate, sodium metasilicate and carbonate, along with wetting agents, starches, gums, etc.

M&H Labs. (Chicago) and Samuel Cabot Inc. (Boston) are among those

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SPECIALTIES

producing broadly distributed liquid cleaners. Composition of these cleaners varies widely—one well-known type is made up largely of cresylic acid, along with chlorinated hydrocarbons, naphtha, and other petroleum solvents.

Also in common use are liquid cleaners composed of benzol, acetone, and methanol. They are essentially paint removers—although wax, used in most paint strippers to retard evaporation of the liquid, is left out. Savogran (Boston) and National Chemical & Mfg. Co. products fit this class.

Multipurpose: Most of these cleaners are designed specifically for oil-based paints, and although the resin involved affects to some degree the ease of cleaning, most work well with oil paints. Shellacs, which require an alcohol solvent, present a somewhat different problem. Water-based paints give little or no trouble, although a brush in which a latex paint has dried is admittedly almost impossible for most cleaners to restore.

Bristle composition—nylon, horsehair, and (on the rollers) dynel—has introduced few problems to the cleaner makers. All apparently are undamaged by the cleaners.

Aiding in the sales of the cleaners has been an increasing acceptance of them by the professional painter. Many of them buy the cleaners in bulk—for the amateur, a quart-size at about a dollar is sufficient—and use them to care for their expensive brushes, instead of the more bulky "fume boxes."

It's the manufacturer's lament that because most liquid cleaners can be used again and again, there is only a small market in repeat sales. But Americans buy well over \$50 million's worth of paint brushes every year, which indicates a substantial if unspectacular market for products to keep the brushes in good shape.

Delaying the Sprout

Maleic hydrazide is the key chemical of a growth regulator recently approved by the U.S. Dept. of Agriculture. The new product, MH-40, was developed by the Naugatuck Chemical div., U.S. Rubber Co., and has been okayed for potatoes and onions—it is said to add several months to their marketable and storage life.

Applied as a preharvest, MH-40 has been shown to prevent sweet Spanish onions from sprouting for as long as eight months, and potatoes have been kept at 55 F for 12 months without sprouting.

About five (for onions) to seven pounds (for potatoes) of the chemical is sprayed on per acre, mixed with 100-150 gal. of water. It is applied one or two weeks before harvesting onions, four to six weeks before digging potatoes. Cost is \$14-19/acre.

MH-40 is absorbed by the plant leaves, then works its way down to the bulbs. It stops further cell division in the bulbs, thus stops sprouting during storage.

Naugatuck says the product is available nationally from large agricultural chemical distributors. Maleic hydrazide is the same chemical used to retard the growth of grass on waste areas, and along lawn edges.

Coyote Controversy

Bitter range wars between cattlemen and sheepmen in the West are over, but the echo lingers on—this time over the use of 1080 poison in predator control.

The 1080 is used to destroy coyotes, and though cattle and sheep ranchers agree that predators must be wiped out, they can't get together on the coyote. It's a predator despised by the sheepmen, but protected by the Toponas Grasslands Protective Assn., a Colorado cattlemen's group.

The coyote preys on lambs—that's what the sheepmen have against it. But it also preys on rodents, which have been ravaging vast areas of range and hay meadows. Cattlemen have posted their property against "hunting, shooting, trapping or poisoning" coyotes—it's their position that 1080 eliminates "practical" predators such as weasels, skunks, badgers and hawks, as well as coyotes, and all these feed on rodents.

Range Tour: At the invitation of the cattle ranchers, sheepmen, representatives of the U. S. Fish and Wildlife Service, Forest Service and others made a jeep tour of mountain ranges. It was unanimously agreed that pocket gophers have ruined vast areas of mountain ranges, and that mice have ravaged mountain meadows. The disagreement: that 1080 has altered the predator population enough to permit the rodents to make this headway.

The cattlemen's claim that "practical predators" such as weasels, skunks, badgers and hawks are killed by 1080 is disputed by the Wildlife's Services' Weldon Robinson.

As he summarizes the situation: coyote population has been greatly reduced—in seven localities coyotes are now about one fourth as numerous as they were a decade ago. Predator control work by the Fish and



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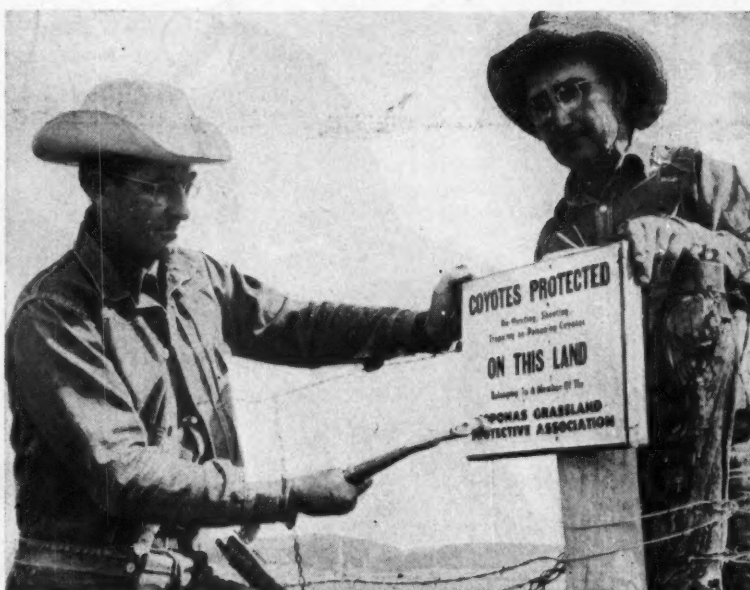
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SPECIALTIES



COYOTE'S FRIENDS: Because 1080 does more than its duty?

Wildlife Service, particularly the employment of 1080, has been largely responsible for this reduction. During the same period, and in the same areas, populations of bobcats, skunks, badgers and raccoons have . . . increased."

Lethal Winner: The wildlife service is exceedingly cautious in using the dangerous 1080 (sodium fluoacetate). It injects a water solution of the poison into 50-100 lb. horse or sheep carcasses and places these "stations" along coyote runs. Because coyotes are far-ranging, one station per township is enough.

To protect other animals, the poison is used during the winter—when hibernating mammals don't get it. Also helping to protect other animals is their much higher tolerance for the poison. Raccoons, badgers, and opossums require a dose of from 10 up to 600 times the amount that would be fatal to coyotes.

All this doesn't satisfy the cattlemen, but in a move to iron out their differences, they've agreed to put up a three-man board in cooperation with the sheep ranchers. Perhaps the board can work out a solution.

Quick Cure: Only in the pilot-plant stage now but coming along fast is a new process, developed by Kingan and Co., Indianapolis, Ind., for smoking bacon. The process turns out smoked pork in 35½ minutes—instead of the days required by older processes.

In outline: Pork is first given an "injector cure" that pickles the meat

with a salt brine solution. It goes under infrared lights, is then moved to a chamber where it is "bombarded" with electrically charged smoke particles. After that, there's another infrared bath, followed by a washing. Patents have been applied for.

Egg-Beater Treatment: Continuing its experiments in using herbicides to assist in growing pine trees, Weyerhaeuser Timber Co., Tacoma, Wash., is now employing a Bell helicopter instead of the Stearman biplanes it formerly used (CW, Nov. 1, '52).

The plan of the timber firm is to kill off the brush and scrub on logged areas so that conifers can grow there again. The chemicals—a combination of 2,4-D and 2,4,5-T in a butoxy-ethanol ester with a diesel oil carrier has proved best so far—destroy broad-leaf brush varieties, but the firs are unharmed. Right now, however, cost of using the chemicals seems to be uneconomically high, but tests under way and due for completion next spring should determine definitely whether the plan is feasible.

Super-Candelilla: A new candelilla wax derivative is being introduced by Candelilla Industrializada, S. A. (Mexico). Durango-Wax, as it is labeled, is said to be suitable for use in polish and carbon paper manufacture. It's melting point is 75-76 C; iodine value is 9.

Polystyrene Protector: A scratch- and flame-resistant transparent coating for polystyrene has been developed by

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Wanted: Physical or Inorganic Chemist, Ph.D. or M.S., to be group leader in research project on halogen compounds of refractory metals. Experience with controlled atmospheres and vacuum technology desirable. Please send resume of qualifications, experience, and salary expected to The Secretary, Metals Processing Laboratory, Room 35-316, Massachusetts Institute of Technology.

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Wanted: Graduate Engineers, preferably chemical, for both Consulting and Field Sales Work. For Sales, should have 3 or more years successful record. For Consulting, young men preferred so that our business can be taught to them and they can move up in years to come. P-7866, Chemical Week.

Unusual opportunity in old, well established fertilizer concern in Midwest for a successful plant superintendent who has proved that he can coordinate production and maintenance in large plant to secure maximum efficiency. Fertilizer experience helpful but not essential. Salary open. Give age, education, experience and salary requirements. P-9061, Chemical Week.

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CHEMICAL WEEK

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PW 8787 Chemical Week

330 W. 42 St., New York 36, N.Y.

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Pumps, Vacuum, new Cenco Megavac, Model 92010A, 1/4 HP-115 V.A.C., 325 RPM, complete with connecting cord, hose assembly and attachment plug. Specially priced at \$137.50 each, f.o.b. New York. Medical Salvage Co., Inc., 217 East 23rd Street, New York, N.Y.

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W 3117 Chemical Week

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BO 8221 Chemical Week
330 W. 42 St., New York 36, N. Y.

SALES OPPORTUNITIES

If you are a manufacturer seeking new or added sales outlets—or if you are a manufacturer's agent or chemicals distributor with the capacity, time and energy to take on additional lines—make your interests known in this column of **CHEMICAL WEEK**. The right agent or jobber teamed up with the saleswise manufacturer makes the right combination for the hard selling days ahead. There's profit for both, which can be initiated through low-cost classified advertising. Write **TRACERS Dept.**, Chemical Week, 330 W. 42nd St., N.Y. 36, N.Y.

SPECIALTIES

Schwartz Chemical Co., Inc. (New York). Called plastic coating BE-40, it can be applied by brush, dip, or spray, and air-dries in 15 minutes. After an hour's cure at 150 F, the coating is claimed to be resistant to abrasion and many organic solvents.

Spreading Paint: Gelvatex Coatings Corp. is building a \$500,000 plant in Anaheim, Calif., that will multiply its present productive capacity about six times. It's Gelvatex's first move in expansion program aimed at national distribution of its vinyl acetate emulsion paints. The firm now has a plant in Pasadena, Calif., markets principally in California. Product was developed by John Beggs, president of Gelvatex, who has license arrangements for similar products with firms in Canada, England, Africa and New Zealand. Principal stockholder in Gel-

vatex is Shawinigan Products Corp. Fluor Corp. designed and is constructing the new plant.

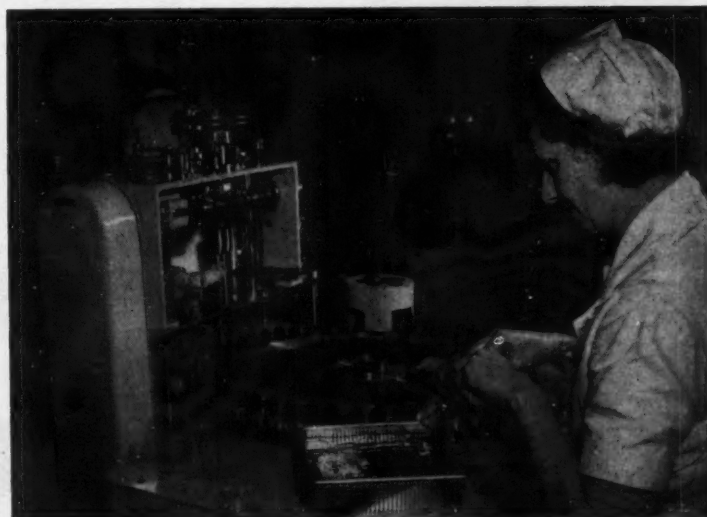
Tough Skin: Claimed to offer the protective qualities of baked enamels, a new room-temperature-drying coating is being offered by Rubber & Plastics Compound Co., Inc. (New York). The new coatings are claimed to dry speedily, and to be resistant to a wide range of acids, alkalis and solvents, as well as to exhibit considerable abrasion resistance.

Rust Hold-Back: Atlas Powder Co. is now selling a new rust inhibiting oil additive tagged Atpet 100. The new compound, akin to the company's Span 80—a sorbitan mono fatty acid ester—is shipped as a concentrate for the refiner or compounder, and addition of 1% is claimed to offer lengthy

Anything Goes

GELATINE CAPSULES, for everything from cigarette lighter fluid to suntan oil and diesel starting liquid, are finding extensive use in Australia. Andrex Pty. Ltd., Melbourne, has a virtual exclusive on gelatine encapsulating there; it produced and sold more than 25 million pellets last year. They're handy, available in variety of colors.

Andrex Pty.'s equipment permits rapid and accurate filling of the capsule—accuracy to within 2% of 0.1 centiliters is claimed. Capsules are formed (*right*), filled and sealed (*below*), then dried and packaged.



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SPECIALTIES

protection against rust. As a lube oil additive, it is claimed to give freedom from preignition and other residue effects of metallic sulfonic inhibitors.

Surface Cure: Reardon Industries, Inc. (Cincinnati) is now offering a curing agent for concrete, which is simply sprinkled on the fresh concrete. According to Reardon, its Duscure hardens the slab and cures it without use of water, paper, or flammable liquids.

Fungus Killer: Odorless anionic emulsions of copper 8-quinolinolate made by Bennet Inc. (Cambridge, Mass.) are now being sold by Naftone, Inc. (New York). A potent fungicide, which has found use in paints, paper size and a host of other products, is said to be offered for the first time in commercial emulsions.

Letting Others In: Stock in R. M. Hollingshead Co., Camden, N.J., will soon be offered to the public. It will be the first time the 64-year-old firm has permitted stock to be sold outside the family. In offering the stock, Hollingshead's President Norton (CW, Aug. 15) said the firm will sink \$400,000 in its research department—including a new pilot plant—as well as \$225,000 for equipping a new California plant. Sales for the first six months of this year were a record-setting \$7,912,005.

Dye 'em While They're Hot: Metro Dyestuff Corp. (West Warwick, R.I.) is this month going into production of a new process for simultaneously dyeing and embossing cellulosic fabrics. The process, called Emboprint by Metro, is licensed from the Plastex G.m.b.H., a division of Dornbusch Machinery Co., Krefeld, Germany.

Key to the new process is the dye, which must be applied at temperatures in the 385-450 F range. Metro claims the colors are fast to dry cleaning, laundering and crocking, and that most embossing machines can be adapted to the new process.

Although dye price has not been set, Metro officials estimate that it will not advance cloth price more than 10¢/yard.

Less Head: Designed to prevent foaming in paper mills, a new synthetic engine size for paper is now offered by Monsanto Chemical Co. in its Mer-size line. The new product is said to eliminate the need for foam-killing additives.

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**"THE PRINTING SURFACE
ON OUR MULTIWALL BAG
GIVES US AN
ADVERTISING BILLBOARD"**

The distinctive Dragon design identifies seven major products manufactured by this well-known company in the cement industry.

The familiar design which establishes the family relationship among Dragon products was developed by Dragon Cement personnel in cooperation with the Union Bag Art Department.

Good design, good printing, and a uniformly good printing surface make Union Multiwall Bags an extra advertising medium for your product as well as an economical container.

MORE SO EVERY DAY, IT'S



UNION *for* **MULTIWALLS**

UNION BAG & PAPER CORPORATION • WOOLWORTH BUILDING, NEW YORK 7, N. Y.

PRODUCTION PROBLEMS INVOLVE PHOSPHATES?



... Wash 'Em Right Out of Your Hair with GENERAL CHEMICAL PHOSPHATES!

If your production problems involve phosphates, you can rely upon General Chemical Phosphates to help you do the job . . . and do it *right*! That's because "G.C." Phosphates are always uniform. Each is made to meet the same strict specifications, shipment after shipment . . . giving you a process material that can be depended upon for consistent quality and purity.

And wherever you may use phosphates—in making soaps and detergents, in textile finishing, in metal or industrial cleaning, or even in boiler water treatment—you will find there's a General Chemical Phosphate in a grade especially suited to your purposes.

Stocks are maintained at all of General's distributing stations from coast to coast. There is one located nearby ready to supply your needs promptly and regularly. Why not arrange to schedule your first shipment from it today?

Product

SODIUM TRIPOLYPHOSPHATE,
Anhydrous
 $\text{Na}_5\text{P}_3\text{O}_{10}$ (Tripoly)

Grade

Powdered
Granular

TETRASODIUM PYROPHOSPHATE,
Anhydrous
 $\text{Na}_4\text{P}_2\text{O}_7$
(TSP) (Pyro)

Powdered
Granular
Diamond

DISODIUM PHOSPHATE,
Anhydrous
 Na_2HPO_4

Powder
Flake

TRISODIUM PHOSPHATE,
 $\text{Na}_3\text{PO}_4 \cdot 12 \text{H}_2\text{O}$
(TSP)

Flake
Coarse
Medium
Standard
Fines

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo
Charlotte • Chicago • Cleveland • Denver • Detroit • Greenville (Miss.) • Houston
Jacksonville • Kalamazoo • Los Angeles • Minneapolis • New York • Philadelphia
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In Wisconsin: General Chemical Company, Inc., Milwaukee

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver



Basic Chemicals
for American Industry